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APPENDIX

TO

Journals of Senate and Assembly,

OF THE

NINETEENTH SESSION

OF THE

LEGISLATURE OF THE STATE OF CALIFORNIA.

Volume III.



SACRAMENTO:
T. A. SPRINGER, STATE PRINTER.
1872.

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MEMORIAL AND REPORT

OF THE

California Immigrant Union,

TO THE

LEGISLATURE OF THE STATE OF CALIFORNIA.

T. A. SPRINGER.....STATE PRINTER.

REPORT AND MEMORIAL.

FORMER APPLICATION TO LEGISLATURE.

At the last session of the Legislature an effort was made to obtain such legislation as would provide for active and extended operations for the purpose of attracting hither a fair share of the great tide of immigration which annually pours into the United States from abroad, as well as that which flows westward from the older and more densely populated Eastern States, but which, by reason of efforts on their part, is mostly absorbed by other States and Territories east of the Rocky Mountains. Perhaps too much was asked, or, rather, more than the Legislature would then have been justified by public opinion in granting. At all events, no action was taken by the State.

ORGANIZATION OF THE CALIFORNIA IMMIGRANT UNION.

The merchants and business men of San Francisco who had petitioned for such legislation were greatly disappointed at the result of their efforts. They were, however, so deeply impressed with the necessity of such work that with characteristic public spirit they determined to subscribe the funds required for the commencement of the movement, though necessarily upon a comparatively small scale. The California Immigrant Union assumed the management of the business and superintended the disbursement of the funds so raised. The plan adopted was substantially that in use in other States, which experience had shown to produce satisfactory results wherever earnestly attempted. It was the preparation, publication, and gratuitous circulation of documents concerning the resources and attractions of California in the older Eastern States, England and her provinces, and those portions of Europe from whence we might hope to draw useful additions to our productive population. For this purpose correspondence was solicited and promptly answered, and every means taken to advertise the fact that information concerning this State could be had gratuitously by addressing any of its officers. Every effort was also used to encourage the publication of matter of the same character by the city and interior newspapers and by private parties.

An office was opened at number three hundred and sixteen California street. Mr. William H. Martin was elected General Agent, and Mr. Charles S. Capp, Manager, at moderate salaries, and these, with an office boy, constituted the working force and the only persons receiving pay for services rendered—their entire time being devoted to the business. An address to the people of the State, setting forth the plans and purposes of the Union and inviting coöperation in the interior counties, was also published and widely circulated, and efforts constantly made to obtain useful and reliable information concerning the public lands open to settlement in the respective counties, and those for sale by railroad companies and private owners, whether improved or unimproved.

A copy of said address and circulars used to obtain coöperation and information from the residents of interior counties are hereto annexed.

PUBLICATION OF IMMIGRATION DOCUMENTS.

Preparations were immediately made for the publication of suitable immigration documents. A prize essay by John S. Hittell, Esq., written for the California Immigrant Union, entitled "California as a Home for the Emigrant, a brief statement of its public lands, wages, climate, agriculture, manufactures, attractions, and general business," was printed in pamphlet form with other matter of a similar character. Twenty-five thousand copies of this pamphlet have been printed, and the greater portion already circulated, as appears from the table hereto annexed. Copies of the latest edition of this pamphlet have been laid upon the desks of members of the Legislature for their examination. It has been favorably mentioned by nearly every paper published in this State, as well as many others published in the Eastern States and foreign countries. Eight thousand copies of the same essay were also procured in newspaper form, together with much other valuable matter of a similar character from Messrs. Wentworth and Boruck, publishers of the *Resources of California*, by purchase and as compensation for permission to use the same in their paper. Besides the number thus secured for the use of the Union, these gentlemen and their friends and patrons also circulated a large edition of their paper, the matter it contained having been selected with that object in view.

GERMAN TRANSLATION.

A translation of this essay into German was also made for the Union by Leo Eloesser, Esq., a distinguished linguist, which was published in the columns of the *Abend Post*, a German newspaper in San Francisco, and an abstract of the same in the *German Demokrat*. The matter was then stereotyped and published in pamphlet form, the edition being five thousand copies. One half of this edition was shipped to Germany for distribution there, together with duplicate stereotype plates for printing subsequent editions there. An agent was employed and sent there at a salary to superintend the circulation of documents there, and take all other measures possible to turn emigrants in this direction. He distributed the documents sent, but the breaking out of the Franco-German war immediately after his arrival prevented his further usefulness there and compelled us to vacate his commission, and the expense thus incurred was not productive of any satisfactory results. Although the war could

not have been foreseen, this disappointment and the heavy drains thereafter made upon the purses of our French and German residents during the war and after its close, for the relief of the widows and orphans, and the wounded, have been such as to materially reduce our subscription list and prevent the issuance of other editions in French, Italian, Danish, and other European languages as intended, or any subsequent editions in the German language. One set of the stereotype plates remain in Germany, and another in San Francisco, ready for use whenever the necessary funds are supplied.

OTHER DOCUMENTS OBTAINED FOR CIRCULATION.

A variety of other documents containing matter suitable for circulation among the emigrating classes were also obtained by donation or purchase. Among these may be mentioned two subsequent editions of the "Resources of California," of each of which we obtained several thousand copies; B. Fabian's Essay on the Agricultural Lands of California, of which we obtained by purchase and donation large numbers in pamphlet, and in newspaper form as a supplement to the *Scientific Press*; the *Sacramento Union*, containing the report of the United States Surveyor General and much valuable statistical and other information concerning this State; the *Stockton Independent*, containing a description of the San Joaquin Valley and its attractions to settlers; the *Kern County Courier* supplement, describing the Kern Valley, and its resources and attractions; San Diego and Southern California, a pamphlet issued by the Chamber of Commerce of San Diego; Los Angeles and Southern California; various numbers of the *Evening Bulletin*, containing articles or information of special interest; about two thousand copies of the Reports of the State Surveyor General, containing the agricultural statistics of the counties; Reports of the State Board of Agriculture and State Agricultural Society; circulars, etc., describing the route to California by steamer and overland, with lists of fares; Hon. Edward Young's Report on Immigration, from the Bureau of Statistics at Washington; circulars of the Riverside Colony in San Bernardino, and Westminster Colony in Los Angeles; and single copies of city and interior papers, containing special information requested by correspondents, etc., etc., etc. A statement of documents received, many of which are yet on hand, is hereto annexed.

A statement showing the distribution of these documents is also annexed, a summary of which is as follows:

DOCUMENTS DISTRIBUTED.

NAMES OF DOCUMENTS.	United States.	Abroad.
English pamphlet "All about California."	11,144	5,763
German pamphlet "All about California."	1,633	2,447
Hittell's Essay. (Extra *Alta*)	6,811	2,270
Resources of California	6,331	2,217
State Surveyor General's Report	1,241	432
Fabian's Agricultural Lands of California	576	
United States Surveyor General's Report. (*Union*)	155	
Sundries	1,052	551
Total	28,943	13,680

Total to December 31st, 1871.....42,623

Besides the above were a great variety of other matter, of which no record was kept, being furnished to others for mailing and distribution. Seven hundred and one copies of the English pamplet and one hundred and seventeen of the German edition were mailed to libraries in the United States and Europe, which do not appear above, as also a large number of copies of the Surveyor General's report, which are included above.

The distribution made of these documents we believe to have been both judicious and useful. The greater portion were mailed in response to direct requests by letter for information concerning this State and to persons offering to circulate additional copies among their friends and neighbors. When any large number were sent together it was to responsible parties, who offered to make good use of them and see they were not wasted. A fuller statement of the States and counties to which such documents were sent, showing how wide has been their circulation, accompanies this report.

CORRESPONDENCE.

The correspondence received at our office has also been very large, as appears from the complete tabular statement, showing the letters received every month. From this it appears that the whole number was one thousand three hundred and twenty-four, being from California, five hundred and eighty-seven; Illinois, ninety-four; New York, sixty-six; Missouri, forty; Massachusetts, twenty-four; Ohio, twenty-two; Wisconsin, twenty-two; Kentucky, twenty-one; Tennessee, nineteen; Michigan, eighteen; Pennsylvania, seventeen; Mississippi, sixteen; Indiana, sixteen; Nebraska, fifteen; Oregon, fourteen; Minnesota, fourteen; District of Columbia, fifteen; Kansas, fourteen; Iowa, thirteen; Nevada, eleven; Alabama, nine; Maryland, eight; Rhode Island, seven; Arkansas, seven; Utah, seven; Washington Territory, six; Virginia, six; Texas, six; New Hampshire, six; Georgia, six; Connecticut, five; South Carolina, five; New Jersey, four; West Virginia, three; Colorado, three; Maine, three; Montana, three; Delaware, two; North Carolina, two; Wyoming Territory, three; Arizona, one; Louisiana, one; Florida, one;

Dacota, one; Idaho, one. Total from United States, one thousand one hundred and sixty-two. England, thirty-nine; Ireland, four; Scotland, five; Europe, forty-two; Germany, thirteen; Denmark, one; Sweden, two; Saxony, one; France, one; Nova Scotia, one; New South Wales, one; New Zealand, eleven; Australia, eleven; Central America, six; British North America, one; Canada, twenty-two; China, one. Total from abroad, one hundred and sixty-two.

The letters of all kinds written from our office, mostly in reply to those received, and all on matters connected with our business, are shown by the detailed statement herewith. They were as follows: To parties in California, seven hundred and fifty-one; New York, nine; Illinois, eighty-three; Missouri, thirty-six; District of Columbia, thirty; Massachusetts, twenty-two; Ohio, twenty-two; Iowa, twenty; Kansas, nineteen; Pennsylvania, seventeen; Tennessee, fifteen; Indiana, fifteen; Michigan, fourteen; Kentucky, fourteen; Nebraska, fourteen; Wisconsin, thirteen; Maryland, eleven; Minnesota, nine; Texas, seven; New Hampshire, six; Mississippi, seven; Nevada, six; Arkansas, six; Virginia, five; Connecticut, five; Oregon, five; New Jersey, four; Utah, four; Maine, four; Washington Territory, four; Rhode Island, four; South Carolina, four; Alabama, four; Georgia, three; Montana, three; Colorado, two; North Carolina, two; Wyoming Territory, one; Louisiana, one; Arizona, one; Florida, one; West Virginia, one; total to United States, one thousand two hundred and eighty-six. To England, forty-six; Ireland, three; Scotland, ten; Germany, twenty-nine; Denmark, three; Sweden, two; Saxony, one; Russia, one; British North America, one; South Africa, one; New Zealand, sixteen; New South Wales, thirteen; Australia, six; China, three; India, one; Canada, twenty-four; Prince Edward's Island, two; total abroad, one hundred and sixty-two; and total number of letters sent, one thousand four hundred and forty-eight.

They were written as follows: eighteen hundred and sixty-nine—October, four; November, forty-one; December, ten. Eighteen hundred and seventy—January, four; February, two; March, one; April, one; May forty-three; June, sixty; July, forty; August, eighty-seven; September, seventy-eight; October, sixty-seven; November, seventy-five; December, one hundred and sixteen. Eighteen hundred and seventy-one—January, seventy-five; February, eighty-three; March, ninety; April, forty-eight; May, forty-nine; June, sixty; July, eighty-eight; August, sixty-eight; September, sixty-nine; October, fifty-one; November, sixty-four; December, seventy-four. The letters received and copies of letters written are on file in our office open to inspection. The greater number of the letters received were accompanied by requests for information, and the greater number of letters written were accompanied by documents containing it. Full statements showing both letters received and letters written, and whence received and where sent, accompany this document.

APPLICANTS FOR INFORMATION.

The number of callers at the office to obtain information of various kinds concerning the facilities for settlers in this State have been as follows:

MONTHS.	From United States.	From Abroad.
1869.		
December	71	3
1870.		
January	49	15
February	18	4
March	4	17
April	152	33
May	105	51
June	152	89
July	47	33
August	54	52
September	100	38
October	48	1
November	70	14
December	120	56
1871.		
January	120	26
February	136	33
March	142	48
April	172	25
May	172	16
June	104	34
July	26	9
August	15	13
September	181	102
October	366	79
November	74	56
December	48	29
Totals	2,546	876
		2,546
Total		3,422

In these numbers are included the families of those who applied at the office for information if they had accompanied them to this State. Many of them represented a number of friends who would follow if their reports were favorable. The majority desired government lands, but quite a number were men of means and desired to purchase well improved places.

OTHER WORK.

Besides the documents mentioned above as circulated by the Immigrant Union, correspondence, etc., a considerable amount of other literary work has been done by the officers of the Union, which has appeared as articles, correspondence, etc., in papers in California and elsewhere. In the able and interesting report on Immigration, published as a congressional document by Hon. E. Young, Chief of the

Bureau of Statistics, at page one hundred and eighty-one, will be found a letter written to supplement the information there given concerning California, obtained in reply to questions addressed to the Assessors of Internal Revenue throughout the State, and relating mostly to matters which could not appear in mere statistics or condensations of answers to specific questions as there given. This report has been deemed so valuable by managers of eastern railroads as a means of turning travel westward over their roads, not alone to California, however, that large editions have been republished by the Union Pacific and Northern Pacific Railroad Companies, and are being widely circulated at home and abroad by their agents for that purpose. Congress also will doubtless order the publication of large editions, and probably also translations for circulation abroad to encourage immigration.

While this publication will undoubtedly benefit California by laying its advantages before the readers, it is evident that it cannot be of the same service as others in which the attractions of this State alone are set forth without similar showings by other States and Territories, even though less favored, which desire to compete with us for a share of the annual domestic and foreign immigration that seek homes on the new and low priced lands of the west. Considerable work has also been done in the compilation of matter upon various topics connected with the development of the resources of this State for reference when required, and for publication in some of the papers above mentioned and otherwise. It is sufficient to say that the fact of the existence of the California Immigrant Union has at different times been mentioned in many newspapers in all parts of the United States, and by others in England, Canada, Australia, and Europe to which sample documents have been sent, and frequently also mention was made of the fact that correspondence is answered and similar documents sent gratuitously to all who apply for them at our office. Much of our correspondence from other States and countries consists of applications for information made in consequence of such notices.

We have also taken pains on all occasions to supply with full and reliable official and other information concerning this State, many gentlemen connected with Eastern newspapers, and others who have visited this State for purposes of business or pleasure, that they might be able to answer the inquiries of their friends and furnish them the material for correspondence, lectures, etc., on their return.

LECTURES, ETC.

We have also availed ourselves of the services of old Californians visiting their old homes in the circulation of our documents whenever the offer to do so has been made. Three gentlemen, old residents of this State who, during the past two years visited the Eastern States, during their stay delivered lectures upon California, which were well attended and excited much interest, as was evidenced by the notices concerning them in the local papers. These were Mr. D. L. Emerson, of Oakland; Mr. Charles Sumner, of San Francisco; and Rev. John Powell, of Rio Vista. The lectures of the latter were in the Welsh language delivered to his countrymen, a frugal, industrious, and intelligent people, whom it is very desirable to attract, and who have formed large settlements in Kansas and other western and northwestern States where sufficient

inducements were held out to them. Messrs. Sumner and Emerson, the former of whom was most successful, distributed large numbers of our documents where they lectured, and demonstrated that suitable agents of this kind could be employed with great advantage in the Eastern States and Canada.

We regret to say that our efforts to secure an active coöperation in the interior of the State have not been as successful as we had hoped. The information we have secured concerning public lands open to settlement and private lands for sale has been laid before all applicants, and such other information, advice, and assistance as we could furnish afforded gratuitously in all cases. Every offer by residents to impart local information to newcomers desiring to settle in particular counties has been availed of, and letters of introduction commending the applicants to their kindly offices supplied when desired.

Thus in the ways mentioned and otherwise whenever opportunity offered all that lay in our power has been done to facilitate and encourage settlement of our vacant lands by attracting a desirable immigration of men anxious to occupy and improve them.

RECEIPTS AND EXPENDITURES.

A detailed statement of the expenditures made in the performance of this work and exhibiting the entire receipts and expenditures of the California Immigrant Union from its organization, November, eighteen hundred and sixty-nine, to December thirty-first, eighteen hundred and seventy-one—twenty-six months—is hereto annexed. During this time we have received:

RECEIPTS.

Donations	$903 30
Subscriptions	19,291 50
Loans	1,853 12
Advertising	947 90
Rent of deskroom	935 75
Total	$23,931 57

The above figures show an average income of nine hundred and twenty dollars per month.

Our expenditures during the same period have been as follows:

EXPENDITURES.

Printing and matter for distribution	$3,427 67
Postage and freight	903 82
Stationery	208 45
Salaries of Manager, General Agent and Secretary, and boy	11,238 35
Collection	471 70
Office expenses	554 02
Rent	2,698 50
Furniture	431 74
Advertising	262 00
Newspapers	179 90
German agency	1,153 12
Loans repaid	1,762 86
Sundries	638 15
Total	$23,927 28
Balance cash on hand	4 29
Total	$23,931 57
Add present indebtedness, about	1,000 00
Total	$24,931 57

The tabular statement hereto annexed exhibits these receipts and expenditures month by month as they occurred, and are submitted as a suitable basis for any estimates it may be desirable to make in this connection.

The gentlemen who have evinced their lively interest in the welfare of the State by these liberal and voluntary contributions, in the majority of cases without the slightest expectation of any direct return therefrom excepting what they, in common with the people of the whole State, would receive from the increased prosperity which additional productive population in the farming and mining districts would create, believe that they have thus performed more than their duty as good and public spirited citizens. The further performance of this duty of attracting desirable immigration and thus hastening the settlement of our vacant lands and the development of all our resources, manufactures, and commerce, must be provided for, if at all, by the State, as it is elsewhere. The enterprise and public spirit and the liberality of private individuals is not sufficient for such an object in a State as large as ours, but possessing so small a population. The experience of other States and countries shows that moneys thus expended produce results that are amply satisfactory to the public and to taxpayers. In proportion as the distance from our State to the great centres of population and the cost of coming here exceed that of other States, and in proportion as our immense area of vacant public and private lands exceeds theirs, so does the amount necessary to be expended in attracting population hither increase. This we have found by experiment to be the case, and an inspection of our expenditures and management generally will show that no useless extravagance has been indulged in. An examination of the estimate of expenses proposed to be incurred in the future will show

that effective operations can hardly be carried on for a smaller sum. If the management of this business is such as is satisfactory, the California Immigrant Union offers its organization, its experience, and its officers, and its services to the State in the performance of any duties of a similar character for which it may please the Legislature to make provision. Unless such provision is made, and the public spirit thus far manifested is appreciated and recognized, as the association has no capital stock, makes no investments, reaps no profits, promises no dividends to its subscribers, and makes no charge for its services, there will scarcely remain sufficient inducement to continue its organization and maintain its voluntary subscription list, and its officers have no desire to do so.

CHARACTER OF APPLICANTS FOR INFORMATION.

Concerning the applicants for information it is necessary to remark that it is impossible to say precisely how many persons have been or will be attracted to this State by the efforts already made. Many of those who do thus come to the State do not apply at all at the office. There are many reasons for this. One is that the information furnished in reply to correspondence was often so complete as to enable the applicants to make up their minds in which part of the State they desired to settle; and avoiding San Francisco and its hotel expenses altogether, they proceeded directly to where they expected to find lands to suit them. Others had friends already settled here, upon whose advice and assistance they would naturally prefer to rely. Americans, and particularly those from the Western States, are quite as familiar with the land laws and regulations as any of ourselves, and quite as able to obtain such information as they need concerning lands, and to travel and take care of themselves and their own interests generally. They dislike to be considered as "immigrants" or strangers, and will not apply for information at a public office, and proceed to make themselves at home among us without ceremony. They travel with their eyes open, and find friends, or make them for themselves. This class, though among the most valuable whom we can attract, and those most readily secured by the circulation of our documents, will never figure largely upon the records of any immigration office. They write for documents, and receive them without acknowledgment, because they see that it pays a State to issue them gratuitously, and because other States do so. They make use of the information they find in them, proceed to the district that suits them, and quietly locate or purchase or lease a farm, and form part of the population, and are shortly followed by their friends, without creating any stir, except a casual mention in the local paper that "quite a number of settlers have recently located in such a district." All that is necessary to attract this class is to bring before them a statement of the advantages of soil, climate, and cheap lands, and other advantages which California possesses over other States. What they usually want when they do apply for information is to know whether what they have heard or learned concerning different sections of the State is correct, and the name and address of some respectable resident, to whom they can apply for local and more precise information in the places they intend to visit, and the most direct and cheapest route to get there. As for the rest, they consider themselves able to do as others do, and perhaps a little better, wherever they may go. Foreigners and former residents of the older Eastern States, where there have been no public

lands for many years, are more minute in their inquiries, and require more actual assistance.

Many of those who called at our office professed to represent many friends who would follow them if their reports after a personal inspection of the State were favorable. Others professed to be agents of organized colonization societies who proposed to found coöperative settlements, or to purchase large tracts of land with a subscribed capital, subdivide and distribute them among stockholders, or sell in parcels to settlers whom they intended bringing here. Others were skilled land operators seeking profitable investments, and apparently as eager to "monopolize" good lands at low prices as any who have been developed in our own State. Quite a number were farmers of considerable means, attracted by favorable reports concerning our mild climate and rich soil, and able and willing to purchase well improved farms near railroads and large towns. The majority, however, were farmers of limited means who desired to obtain public lands upon which to settle and make improvements under the homestead or preëmption laws, and would, therefore, in every sense of the word, make desirable additions to our productive and taxpaying population, if secured. Many of these visitors traveled extensively upon this coast in search of locations, and the severe drought prevailing here caused a large number to visit Oregon and Washington Territory, where agents informed them the rainfall is more certain and greater, railroads in course of construction, and the difficulties in obtaining public lands less than here. Many of this class afterwards returned, either disappointed or because better pleased with what they saw here. Those who traveled most complained greatly of the large tracts of unsurveyed Government land held by single individuals without claim of title and under pretence of the slightest possible improvements, and from which, under the possessory Act and the rulings of our Courts, they succeed in excluding all others who would gladly settle and improve there. They were unable to perceive how the interest and welfare of the State was furthered by thus permitting one man, who pays no taxes and makes no improvements, to drive off from ten to forty other persons, each of whom would gladly do both; and in such cases we were compelled to admit that we did not claim this to be either an advantage of California or an inducement to agricultural settlers. And since it is not for the interest of the State or of any county to permit one man to hold large tracts of land without title or payment of taxes, and prevent the settlement of twenty other men upon land to which they each have at least as much right as himself, and would willingly improve and pay for, we hope to see a statute passed by which our Courts will not protect such possessions of tracts of unsurveyed lands larger than the National Government will award the first occupant after survey made, and compel the marking out of claims which may be held, in order that the residue shall be open to those who need it, and are willing to pay the cost of survey and take it on the terms the Government offers, and pay taxes on it forever after.

The letters on file in our office and the applications made there show conclusively that whenever the contrast between our mild Winters and bright Summer skies, and long and severe Winters and short Summers, and the frequent rains that ruin or constantly endanger the fruits and crops of the farmer, even when ripened, in Canada and the Northern and Western States, is properly set before them, very many of the residents of those States are easily induced to sell off their farms and seek new and more congenial homes in this State, and seldom regret the change.

Another fact established by these letters is that the result of the circulation of immigration documents, though sure, need not always be looked for in a single season. Many who receive them make up their minds that they will come to California, but cannot do so until they are able to sell or make some satisfactory disposition of lands where they are. Often one, two, or three years will elapse ere they are able to do so. Sometimes they are compelled to abandon their farms when they move westward again; others make leases and leave a power to sell when opportunity offers, with some agent in the vicinity, and come with what available means they have. These and others who make sales on long credits, come here, make a location, commence in a small way until the proceeds of their sales become available and can be expended for stock and comfortable improvements. Thus when convinced of the advantages of a residence in this State, they work for months, or even years, to wind up their business, and submit to many inconvenience, to come here; they pay the comparatively high rates of fare and endure the meagre accommodations afforded on immigrant trains to families and travelers of limited means, to seek a climate in which, even if no rich, a man may live comfortably all the year round; where the streams are not frozen, nor the ground covered with snow; where all industry is not paralyzed in Winter, and one half the year consumed in efforts to lay up provisions for man and beast during this long unprofitable season of enforced idleness.

The addressing of such documents to one eastern farmer does not affect him alone. Its contents are discussed by the members of his family, their friends, neighbors, and acquaintances. If he is convinced, sells his farm and comes here, his neighbors for the same reasons that influenced him, are often ready to follow his example if they can arrange to do so. Often relatives in other States desire to settle near him, and particularly if his reports concerning his own success are favorable; others are certain to follow whether they settle near him or not. Thus the effect of such documents may be looked for long after they are sent and read by those who originally receive them. If once a considerable current of immigration is turned towards this coast, there need be no fears but that it will steadily grow and swell in the future until an ample return is obtained for whatever reasonable outlay is made to secure it.

WIDE CIRCULATION OF DOCUMENTS.

In order to secure the widest possible circulation of the information distributed, nearly all of our documents have been accompanied with a request that when read, the person receiving them will deposit them in some public reading room or library not already supplied, where they will be preserved, that others may read them, and that extra copies sent may be circulated among friends likely to be interested in their contents, and an offer to supply gratis similar documents to all others who desire them and might thereby be induced to settle in this State. In very many cases applicants for documents have asked for additional copies for friends, or the writers have offered to circulate usefully as many as may be sent. In all cases such offers of gratuitous service have been accepted and a liberal supply furnished, and we know in many cases that the promise has been faithfully kept. This has been done in England, Australia, and New Zealand, and we can thus dispose of all we can supply. We have thus supplied several thousand copies of our

publications and documents to the agents of the Union and Central Pacific Railroad lines in the Eastern States, England, and Europe, and to the agents of the steamship lines between San Francisco and Australia and New Zealand, to be placed in the hands of their ticket agents at the seaports and in the interior, in order to induce some who otherwise might not think of coming to come, and others who were intending to come to America, to select California as their place of residence in preference to any of the Eastern States and Territories. The owners of transportation lines are very willing to assist us to benefit California in this manner because they are thus directly benefited. Their agents are glad to receive our documents because by their circulation their commissions on sales of tickets are increased. This mutuality of benefits is the true foundation for coöperation in any undertaking, and upon the fact that every class in the community and every section of the State will be benefited by a large and speedy increase of our productive population, we rest an application for assistance from the State Treasury to enable the California Immigrant Union to enlarge and make its public spirited operations more effectual.

ESTIMATE OF MONTHLY EXPENSES OF AN EFFECTIVE IMMIGRATION AGENCY

The application made for an appropriation of the sum of two thousand five hundred dollars per month, in order to place the operations of the California Immigrant Union upon an effective working basis, was founded upon the following estimate:

Office rent	$100
Manager's salary	200
General Agent's salary	200
Clerk	100
Expenses in office	50
Postage and freight	200
Traveling expenses	100
Translations	25
Printing and purchase of documents here and abroad equal to ten thousand copies per month	500
Copies of records, maps, and field notes of eight Land Offices	200
Advertising in Eastern States and Europe	100
Lecturer in Eastern States	200
Agencies.	
London and Liverpool, with occasional lecture	250
Germany	150
Copenhagen	25
Sweden and Norway	50
Bremen	50
Hamburg	50
Havre	50
Chicago	50
New York	100
Total	$2,750

As some of the above expenses might not be continuous, or commence for some months yet, and as the State should obtain copies of the United States Land Office maps and field notes for the State Surveyor General's office, and furnish copies of those pertaining to each county to the County Recorder, in whose office they might be open to public inspection, we believe with proper economy two thousand five hundred dollars per month would serve for the maintenance of an agency on the scale proposed; the money that might not be needed or could not be usefully applied for any one of the objects specified being transferred to others where experience showed the best results to be obtained. This estimate includes no allowance for salaries in San Francisco to any person whose whole time is not devoted to the business. A smaller appropriation might maintain a bureau of correspondence in San Francisco and provide for the printing and circulation of documents by mail as heretofore. This has been done by private subscription already by an association. But what is wanted is provision for active work outside of this State, at the points where the tide of emigration flows most strongly; where the emigrants are collected, shipped, landed, and scattered; and that our documents may be placed in their hands even before they start from their homes, that they may start with the full determination to come here, and not in doubt as to where they will settle, leaving the question to be decided by the State or railroad company whose agents in New York happen to be most active or most unscrupulous. Work of this kind cannot be secured unless it is paid for. We believe it can be secured for the sum named through the agency of our correspondents and ocean and railroad transportation companies who are interested to see our operations succeed. It will be seen hereafter that Minnesota appropriated ten thousand dollars for this purpose out of a total State tax assessment of three hundred and twenty-five thousand dollars. The actual receipts of the State of California for the year ending June thirtieth, eighteen hundred and seventy-one, were, as per report of the State Controller, three million three hundred and twenty-nine thousand nine hundred and eighty-four dollars and ninety-nine cents, or over ten times as much.

THE GROWTH OF NEW STATES.

From the census returns and other estimates which have been accepted as reliable it appears that the growth of some of the new States which have competed with California for population have been as follows:

California.—In eighteen hundred and fifty, population as per census, ninety-two thousand five hundred and sixty-seven; in eighteen hundred and sixty, census, three hundred and ninety-seven thousand nine hundred and ninety-four; in eighteen hundred and sixty-six, estimate, four hundred and seventy thousand five hundred and ninety-seven; in eighteen hundred and seventy, census, five hundred and sixty thousand two hundred and forty-seven. Gain in last ten years 47.5 per cent.

Iowa.—The growth of the population of Iowa is represented by the following figures:

1838	22,859	1854	326,013
1840	43,114	1856	519,055
1844	75,152	1859	638,775
1846	97,588	1860	674,913
1847	116,651	1863	701,732
1849	152,988	1865	754,699
1850	191,982	1867	902,040
1851	204,774	1869	1,040,819
1852	230,713	1870	1,191,812

Gain in last ten years, 76.6 per cent.

Minnesota.—In eighteen hundred and fifty, six thousand and seventy-seven; in eighteen hundred and sixty, one hundred and seventy-two thousand four hundred and thirteen; in eighteen hundred and sixty-six, two hundred thousand; in eighteen hundred and seventy, four hundred and thirty-five thousand five hundred and eleven. Gain in last ten years, 153.2 per cent.

Nebraska.—In eighteen hundred and sixty, twenty-eight thousand eight hundred and forty-one; in eighteen hundred and seventy, one hundred and twenty-three thousand. Gain in last ten years, 326.5 per cent.

Wisconsin.—In eighteen hundred and forty, thirty thousand nine hundred and forty-five; in eighteen hundred and fifty, three hundred and five thousand three hundred and ninety-one; in eighteen hundred and sixty, seven hundred and seventy-five thousand eight hundred and eighty-one; in eighteen hundred and seventy, one million fifty-five thousand one hundred and sixty-seven. Gain in last ten years, thirty-six per cent.

Oregon.—In eighteen hundred and sixty, fifty-two thousand four hundred and sixty-five; in eighteen hundred and seventy, ninety thousand nine hundred and twenty-two. Gain in last ten years, 73.4 per cent.

Washington Territory.—In eighteen hundred and sixty, eleven thousand five hundred and ninety-four; in eighteen hundred and sixty-three, twelve thousand five hundred and nineteen; in eighteen hundred and seventy, twenty-three thousand nine hundred and one. Gain in last ten years, 106.2 per cent.

When this increase is compared with the slow natural growth of population it is evident how largely this increase has in every instance above mentioned been owing to foreign and domestic immigration, and how important it is that this, the surest and most rapid means of increasing the population and wealth of new States, shall be stimulated and promoted by every legitimate means within the power of legislators.

The following table more fully shows the growth of these States in material wealth as well as in population during the past ten years, as shown by the United States census returns of eighteen hundred and sixty and eighteen hundred and seventy.

TABLE

Compiled from Census Returns, showing Relative Growth in Population and Wealth of certain Western States.

STATES.	Population, 1860.....	Total estate, 1860.....	Population, 1870.....	Per cent gain..	Actual gain in Population..
California	379,995	$139,654,667	560,285	47.5	180,290
Iowa	674,913	205,166,985	1,191,802	76.6	516,889
Minnesota	172,023	32,018,773	435,511	153.2	263,488
Nebraska	23,821	7,426,949	123,000	526.5	99,179
Wisconsin	775,881	156,226,169	1,055,167	36.0	279,286
Oregon	52,465	19,024,819	99,922	73.4	47,457
Washington Territory	11,524	4,394,735	23,901	106.2	12,377

TABLE

Compiled from Census Returns, showing Relative Growth in Population and Wealth of certain Western States—Continued.

STATES.	Total estate, 1870.....	Gain in estate.....	Increase per head of new population	Average wealth per capita, 1860.	Average wealth per capita, 1870.	Increase native born population	Increase foreign born population	Proportion of increase, foreign to native born...
California	$269,644,088	$129,989,421	$721	$367	$481	116,950	63,303	.54
Iowa	308,099,165	102,932,180	199	303	258	418,899	97,980	.23
Minnesota	84,160,368	52,141,595	197	186	193	165,714	101,969	.61
Nebraska.....	55,719,432	48,292,483	486	311	453	69,755	24,397	.35
Wisconsin	333,447,566	177,221,397	634	201	221	191,217	87,572	.45
Oregon.....	31,798,510	12,773,691	269	362	318	31,981	6,477	.20
Washington Territory.....	10,187,815	5,793,080	468	381	426	10,481	1,880	.18

From the foregoing table it appears:

First—That the actual increase in population in California during the past ten years has been less than in Iowa, Minnesota, and Wisconsin.

Second—That the percentage of increase of population has been less in California than in Iowa, Minnesota, Nebraska, Oregon, or Washington Territory.

Third—That the increase in wealth of all the other States enumerated has been at rates varying from about two hundred dollars per head to six hundred and thirty-four dollars per head for the additions to their population during the past ten years, while in California it has been at the rate of seven hundred and twenty-one dollars per head, so that apparently what increase of population has been secured by California has increased its wealth more than has been the case in any other State named.

Fourth—That with this growth of population the average wealth of each inhabitant in the State has also increased, as shown by the table in every State except Iowa, as to which the explanation is furnished by the United States Land Office reports, viz: that most or all of the government land there disposed of is taken under the homestead law, by which title does not pass until after five years' residence, and consequently the values of such farms do not appear in assessment lists, which form the basis of such estimates.

It will therefore appear that from whatever point of view it is regarded, immigration is a source of wealth and prosperity in any new State in which there are large bodies of vacant lands open to settlers and awaiting improvement, on terms that bring them within the means of poor men, and the facts concerning California appear to constitute an argument that is irresistible in favor of all measures calculated to promote immigration to this State.

PASSENGER MOVEMENTS IN CALIFORNIA.

The following table shows the gain of population in this State during the past ten years by travel only, and not by births, the figures being the balances of arrivals over departures.

In 1862, by sea	14,771
In 1863, by sea	15,882
In 1864, by sea	9,773
In 1865, by loss, 3,780	
In 1866, by sea	4,759
In 1867, by sea	15,264
In 1868, by sea	34,941
In 1869, by sea	24,400
In 1870, by sea, 6,633, by rail, 8,446	15,079
In 1871, by sea, 2,361, by rail, 7,921	10,282
Total gains	145,371
Less loss in 1865	3,780
Net gains in ten years	141,371

The gains by sea for the four previous years were as follows:

In 1858	12,746
In 1859	13,402
In 1860	16,185
In 1861	16,864
Total	59,197

Which added to the above, make a total gain in fourteen years by immigration of two hundred thousand five hundred and sixty eight.

The fluctuations here shown were owing to a variety of causes. In the early years of the late civil war very many persons came here for a merely temporary residence, to escape the troubles in the East. As the war drew to a close they returned again, so that our gain in eighteen hundred and sixty-four was six thousand less than in eighteen hundred and sixty-three, and in eighteen hundred and sixty-five the departures exceeded the arrivals by three thousand seven hundred and eighty. Many Californians also went East to take part in the war. In eighteen hundred and sixty-eight the rapidly approaching completion of the Pacific Railroad created an unusually large movement, by which we gained to the extent of nearly thirty-five thousand. In eighteen hundred and sixty-nine the balance in our favor fell off ten thousand five hundred, viz: to twenty-four thousand four hundred; and in eighteen hundred and seventy a further fall of nine thousand three hundred occurred, and reduced our gain to fifteen thousand and seventy-nine. During eighteen hundred and seventy-one this decline continued to the extent of nearly five thousand, and our gains were reduced to ten thousand two hundred and eighty-two. This decline has undoubtedly been owing largely to the drought which has prevailed during the past two years, and also to the actual difficulties encountered by newcomers in obtaining Government lands at Government rates in consequence of the operation of the Possessory Act as interpreted in the Courts, under which large tracts of unsurveyed lands are held by single individuals, and settlers excluded, and the absence of a Trespass Act, in consequence of which the small farmers' crops are at the mercy of the owners of herds, unless protected by a fence, which in many districts would cost more than the actual value of the land, an expense many settlers are utterly unable to incur. Another reason for this falling off of immigration is doubtless the course of certain newspapers in this State, the editors of which have greatly magnified the evils which actually exist, depreciated the real resources and attractions of the State for settlers who are able to purchase or locate land and commence farming, and insisting that out of the eighty millions of acres of lands owned by and not yet disposed of by the General Government none remain that are worth the taking, have seriously advised any who might intend to come here that the inducements offered by other States are far superior to those of California—a course the motive or policy of which it is impossible to explain. To whatever cause this decline in the number of newcomers may be attributed, the necessity of active and immediate measures to check it is sufficiently evident.

PASSENGER MOVEMENT OF 1870 AND 1871.

During eighteen hundred and seventy-one the passenger movement has been as follows, month by month:

1871.	BY SEA.		BY RAIL.	
	Arrivals.	Departures.	Arrivals.	Departures.
January	555	518	1,109	1,044
February	534	629	1,066	1,063
March	779	597	2,086	1,456
April	741	916	3,149	2,034
May	1,828	805	4,138	2,511
June	2,208	797	3,028	2,268
July	1,089	612	2,667	1,925
August	938	787	2,450	2,251
September	839	1,289	2,491	2,400
October	761	489	3,349	2,142
November	1,085	1,192	2,824	1,775
December	836	1,201	1,460	1,047
Totals	12,193	9,282	29,817	21,896

Arrivals by sea	12,193	Departures by sea	9,832
Arrivals by rail	29,817	Departures by rail	21,896
Total	42,010	Total	31,728
Arrivals	42,010	Gain by sea	2,361
Departures	31,722	Gain by rail	7,921
Net gain	10,282	Total	10,282

As showing the charaeter of this movement, the following figures, exhibiting the passenger movement by sea for eighteen hundred and seventy and eighteen hundred and seventy-one are given:

Arrivals and Departures by Sea, 1870 *and* 1871.

	1870.		1871.	
	Arrivals.....	Departures..	Arrivals.....	Departures..
From and to Panama.....	5,782	7,260	3,459	4,166
From and to Eastern ports direct...	18		3	
From and to England direct.....	11	1	5	6
From and to Europe.....	16		3	
From and to China and Japan.....	1,069	4,232	5,542	3,264
From and to Hawaiian Islands.....	992	629	844	516
From and to Mexico.....	565	393	416	294
From and to Australia.....	1,315	433	875	521
From and to British Columbia.....	775	463	955	963
From and to other countries.....	118	107	91	102
Total.....	20,161	13,528	12,193	9,832

Thus from the above it appears that while the arrivals from China and Japan in eighteen hundred and seventy were only one thousand and sixty-nine, the departures were four thousand two hundred and thirty-two, indicating that three thousand one hundred and sixty-three more persons returned to China than came here.

In eighteen hundred and seventy-one the arrivals from China and Japan were five thousand five hundred and forty-two, and the departures were three thousand two hundred and sixty-four, indicating a gain from that direction of two thousand two hundred and seventy-eight, the bulk of which was Mongolian.

The gains by rail from Eastern cities are previously stated. These figures point out the importance of taking measures to secure what additional population we require from desirable rather than undesirable sources.

According to the returns made to the Bureau of Statistics, it appears that during the quarter ended December last, there arrived at the port of San Francisco one thousand eight hundred and sixty-five immigrants, of whom one thousand six hundred and ninety-six were male, and one hundred and sixty-nine female. The nationalities of the immigrants are as follows: England, forty-eight; Ireland, fifty-seven; Scotland, twenty-three; France, eight; Germany, twenty-four; Mexico, one hundred and twenty-six; Australia, six hundred and sixty-one; Tahiti, sixteen; Chile, four; Peru, seven; China, six hundred and thirty-six; Vancouver's Island, one hundred and eighty-nine; Sandwich Islands, thirty-six. Their occupations were: Clergymen, three; clerks, forty-two; cooks, three; farmers, six; laborers, one thousand and twenty-three; merchants, fifty-four; mechanics, two hundred and fifty-six; mariners, sixteen; miners, one hundred and thirty-three; physicians, eight; without occupation, two hundred and sixty-seven.

According to the latest official estimate (October sixth, eighteen hundred and seventy-one), the area of the State of California will approximate to one hundred and fifty-three thousand square miles, or ninety-seven million nine hundred and twenty thousand acres. Up to the present time only a little more than one third of this area has been surveyed by the General Government. Of this area, it is estimated by the Commissioner of the United States General Land Office, "that ninety million acres are susceptible of a diversified agriculture, or of otherwise being made productive." (United States Land Office report, eighteen hundred and seventy, page one hundred and sixty.) The usual estimate is that forty million acres are arable; the land suitable for grazing of equal extent, and ten million acres capable of being made productive by protection from overflow when swamp, or by irrigation when arid.

The United States Land Office report for eighteen hundred and seventy, page one hundred and sixty, says: "Excluding the area granted by the General Government for different purposes, also the surface covered by Spanish and Mexican grants, and the quantity embraced in sales and locations, there yet remain one hundred million seventy thousand one hundred and seventy-seven and sixteen one hundredth acres of public lands within the limits of the State liable to disposal." Also, further on: "It is estimated that the coast district contains thirty thousand square miles of mountains, and twenty thousand square miles (twelve million eight hundred thousand acres) of valleys; and the interior districts, eighty thousand square miles (fifty-one million two hundred thousand acres) of valleys and plains, and fifty thousand of mountains;" (page one hundred and sixty-three.)

As the latter estimate of the entire area of the State above given (made by the Chief Draughtsman in the office of the United States Surveyor General in San Francisco) purports to be a correction of former estimates, by omitting bays, harbors, lands covered by water, etc., the foregoing statement probably should be reduced in the same proportion, viz: about twenty per cent. Thus corrected the amount of land still to be disposed of by the General Government, and a very large percentage of which is still open to actual settlers, is sufficiently great to merit the attention of wise legislators, who appreciate the importance of hastening the process of occupying and making it productive.

The last report of our State Surveyor General shows that the area of land cultivated in this State in eighteen hundred and seventy-one does not greatly exceed three million eighty-three thousand four hundred and ninety-five acres, or about one in every thirty, and that about one half of this area is devoted to the single crop of wheat.

The actual population of California as compared with its area is so small, viz: only about four to the square mile, that it is evident, without any important additions to the portion which resides in cities and towns, that of the agricultural regions might be multiplied several hundred per cent without beginning to approach the degree of density which is consistent with the highest prosperity, or even that which has been attained in some of the larger and older Eastern States. Indeed, the prosperity of our larger cities and towns, in which are concentrated a great proportion of the taxable property of the State, requires that they shall be backed up by a larger agricultural and productive population settled around and beyond them. This has long been evident to every intel-

ligent person, whether resident among us, or merely a casual visitor who has examined the subject with any degree of care.

DISTRIBUTION OF POPULATION IN CALIFORNIA.

The population of California as given by the United States census of eighteen hundred and seventy was five hundred and sixty thousand two hundred and forty-seven, of whom four hundred and ninety-nine thousand four hundred and twenty four are whites, forty-nine thousand three hundred and ten Chinese, four thousand two hundred and seventy-two colored, and seven thousand two hundred and forty-one Indians. Of these we find one hundred and fifty thousand three hundred and fifty-one, or nearly twenty-seven per cent, concentrated in San Francisco alone. In the ten cities and towns which succeed it in the order of their populations, viz: Sacramento, sixteen thousand two hundred and ninety-eight; Oakland, eleven thousand one hundred and four; Stockton, ten thousand and thirty-three; San José, nine thousand and ninety-one; Grass Valley, seven thousand and sixty-six; Vallejo, six thousand three hundred and ninety-two; Los Angeles, five thousand six hundred and fourteen; Marysville, four thousand three hundred and seventy-five; Chico, three thousand seven hundred and eighteen; and Santa Clara, three thousand four hundred and seventy, we find an additional population of seventy-seven thousand one hundred and sixty-one—over thirteen per cent. Thus we find over forty per cent of our inhabitants concentrated in eleven of the largest cities and towns, leaving less than sixty per cent residents of the agricultural and mining districts beyond them. If the complaints made by many of these towns—that the enumeration was defective—were true, the case is worse than as stated above. If we then take the numerous other towns not named above and estimate the number of inhabitants who do not occupy, cultivate, or improve the soil, and the large number of miners who are engaged in operations of a character which are not as yet productive, it will be evident that the number of people now actually occupying and cultivating and otherwise improving and making productive the vast area of good agricultural land within the limits of this State is far smaller than is consistent with general and substantial prosperity. If we examine the methods of culture and pasturage in use among the class who occupy the lands which are adapted to agriculture, we find that our herdsmen and many of our farmers are exhausting the natural pastures by annually cutting or pasturing off the seeds before maturity, and taking no means of replenishing the land, whether by rest or the sowing of grass seeds, such as are in use in all countries where a careful and economical agriculture prevails. Our farmers also by confining themselves to the production of a single staple without manuring, rotation, or diversity of crops, are impoverishing their land, and at the same time not affording that permanent and profitable employment for laboring men and women, which is the chief characteristic of agriculture in other countries, even where labor-saving machinery has attained its greatest perfection. The facts in this regard have been fully stated in the annual reports of our State Agricultural Society. It is apparent that important additions are necessary to our agricultural population, not only to increase its numbers, but also that our agriculture may be improved. The wealth of the State would be greatly increased by

adding to its population. Population alone is wealth, and where it exists material wealth that is found by both Assessor and Tax Collector grows and increases with it, and thus the burden of maintaining a State and county and municipal governments, as well as schools, roads, and other institutions of civilization is diminished, because shared by a greater number.

When we consider that California is as large as half a dozen of the most populous eastern States which by reason of the density of their population sustain all the institutions of a high civilization at far less expense to the taxpayers than is now possible here, the necessity for immediate and active efforts to bring about a change in our condition is sufficiently apparent.

HOW TO ATTRACT POPULATION.

The question then arises: how shall this be done? What means shall we take to attract useful additions to our population? These questions are best answered by references to the means adopted by other countries that have been situated in many respects as we are now. These questions have received more or less attention in all countries newly occupied by the Anglo-Saxon race. In the Australian colonies, situated as they are at the antipodes, a variety of plans have been adopted. At first used only as a penal settlement, the natural advantages of the country, which in many respects resemble those of California, soon attracted voluntary immigrants. The discovery of their gold mines shortly after the discovery of the mines in this State, created a rush thither similar to that which first populated our own mountains. As the yield of their placer mines diminished the attractions of agriculture, pasturage, and manufactures became stronger, and the number of those engaging in these productive industries increased. The development of the ordinary institutions of civilization created the same desire for a permanent population to sustain them that arose among us a few years ago. Accordingly a liberal land system was established under which the herdsman could lease a large tract of land until agricultural settlers required it, and farmers who desired to settle could purchase what land they needed for agriculture on easy terms of credit. To hasten this permanent settlement and improvement of the country, and thus lay the foundation for manufactures and the development of every other resource, a system of agencies in the mother country and assisted passages for immigrants has been devised and set in operation, the result of which has been so satisfactory that all the colonies are inaugurating similar movements and making liberal provision to secure their efficiency. The following short item from the *London Daily Telegraph* of April twenty fifth, eighteen hundred and seventy-one, shows what is accomplished in this manner by a single colony:

Queensland Emigration.—The ship Indus, two thousand five hundred tons burden, sailed on the nineteenth instant from Gravesend for Brisbane, Queensland, under the command of Captain John Roberts; Surgeon Superintendent, E. Dowdney, Esq.; Matron, Miss Gillies. The Indus is the one hundred and third vessel that has sailed on the land order system of emigration under the immediate direction of the Queensland Government Office, thirty-two Charing Cross, London. She contains three hundred and ninety-two souls, divided into paying, assisted, and free

passengers, and consisting of one hundred and fifty members of families, one hundred and five single men, one hundred and thirty-seven single females.

The settlement of the Canadian Provinces has been encouraged by similar means.

It is not expected that the State of California will adopt any system as thorough as that above mentioned, and fortunately we have not the same difficulties to overcome as the Colonies in Australia and New Zealand, while the inducements we are able to present to emigrants are far greater. But it is a matter of history that those countries grow most rapidly in wealth and population by voluntary immigration whose resources and attractions are most thoroughly advertised and thus brought to the attention of the classes that may be attracted, and which do most to facilitate the movements of those who are able and willing to come. The English Colonies have largely depended upon the proceeds of sales of land to settlers, usually at one pound sterling, or five dollars per acre, to reimburse them for the outlay incurred in attracting them, and their expectations have not been disappointed. California offers to settlers lands gratis under the homestead law, or at the mere cost of survey and registry by preëmption; *i. e.* at one dollar and twenty-five cents, and two dollars and fifty cents per acre. This inducement is sufficient to attract them if only the quantity and quality of our lands and the advantages of our climate, our public school system, and other liberal legislation are properly made known, what is possible done to diminish the cost of transportation hither and the expense and difficulty of obtaining the information they require as to suitable available lands upon which to make their homes after their arrival.

WHAT HAS BEEN DONE IN OTHER STATES.

Several of the Western States have adopted legislation and appropriated puplic moneys for the purpose of attracting population, to hasten the occupation and cultivation of their vacent lands.

Iowa.—In eighteen hundred and sixty Iowa appointed a Commissioner to reside at New York, to promote immigration to the State of Iowa. The war interfered with his success, and propably they had not the right man in the right place. In eighteen hundred and sixty-two his office was abolished. In eighteen hundred and seventy, however, "An Act to encourage immigration to the State of Iowa" was passed. The Board of Immigration created, consists of the Governor and one member from each Congressional District. A Secretary elected by them is the only working officer, as the Board only meets annually, and mileage is only allowed them for two meetings in each year. The Secretary is paid for his services. Five thousand dollars was appropriated for the publication of documents prepared by the Secretary, and by a joint resolution the Secretary of State was directed to supply postage and stationery. Under this authority the paper was supplied for printing sixty-five thousand copies of their pamphlet as well as all other postage and stationery, an amount equal to the original appropriation. The Secretary informs me that the present Legislature will be asked for a largely increased appropriation (twenty thousand dollars) upon the showing made.

LEGISLATION OF MINNESOTA.

In Minnesota the Legislature commenced legislation upon this subject by an Act to encourage immigration, approved June eleventh, eighteen hundred and fifty-eight. It appropriated only one hundred dollars, to be paid Joseph A. Wheelock for preparing and superintending the publication in newspapers in different parts of the United States of a series of essays on the climate, soil, and resources of the State of Minnesota.

On the second of August of the same year, the Legislature passed an Act providing for the creation and regulation of emigrant aid societies to provide for the encouragement of emigration to the State of Minnesota.

By an Act to provide for the encouragement of immigration, approved April fifteenth, eighteen hundred and sixty-one, the Commissioner of Statistics was authorized to publish annually, at the expense of the State, five thousand copies of his report, as a pamphlet of not more than two hundred pages, which were to be distributed through Europe and the United States, and monthly official communications from him were to be published in leading papers in the large eastern cities, and those of European seaports if possible. One thousand dollars was appropriated for his salary, in lieu of copyright, and fifteen hundred dollars for his expenses.

In eighteen hundred and sixty-three, during the war, the Act was repealed. In eighteen hundred and sixty-four, an Act to organize a system for the promotion of immigration to the State of Minnesota was passed, and approved March fourth, eighteen hundred and sixty-four. It directed that three thousand dollars should be appropriated annually; and three thousand four hundred dollars was appropriated in eighteen hundred and sixty-four to carry the Act into effect.

So satisfactory were the results thus obtained that, in eighteen hundred and sixty-seven, the Legislature created a State Board of Immigration, and placed ten thousand dollars at their disposal, to employ agents and correspondents, prepare and publish documents concerning the resources of Minnesota, etc., and to enhance and encourage immigration by every means in their power, and they were to report their labors, with facts and suggestions, as a basis for future legislation. In eighteen hundred and sixty-eight, three thousand dollars was appropriated for the publication and distribution of immigration documents. The total amount assessed for State taxes in Minnesota during that year was three hundred and twenty-five thousand seven hundred and eighty-seven dollars and eighty-five cents.

In eighteen hundred and sixty-nine the Act of eighteen hundred and sixty-seven was repealed, apparently to change the Commissioners, for a similar Act was at once passed, and ten thousand dollars was placed at the disposal of the new Board. The total State tax assessed in Minnesota for eighteen hundred and sixty-nine was three hundred and ninety thousand six hundred and twenty dollars.

In eighteen hundred and seventy another change in the Board appears to have been necessary, for a new Act was passed, and two out of the three Commissioners, in addition to the Governor and Secretary of State, were named, and ten thousand dollars placed at their disposal. By another Act a Commissioner of Statistics was created, (the Assistant Secretary of State is ex officio Commissioner,) with power to secure very full statistics from county officers concerning Minnesota, "its agriculture, manufactures, commerce, and population, including vital statistics

and all useful facts which he may be able to gather bearing upon the material and social interests of the State, and tending to afford at home and abroad a correct knowledge of its resources and progress." The statistics thus compiled were published and used as an immigration document, precisely as the Surveyor General's report has been used by the California Immigrant Union of this State.

LEGISLATION OF WISCONSIN.

In Wisconsin, in eighteen hundred and sixty-seven, an Act was passed "to enhance and encourage immigration to this State from the older States of the Union and from Europe." It provided for printing and distributing immigration pamphlets in the English, Welsh, German, and Scandinavian languages, in such number as to the Board may seem proper. Only two thousand dollars was placed at the disposal of the Board for this purpose.

In eighteen hundred and sixty-eight the Act was amended, enlarging the power of the Board and adding French to the list of languages in which pamphlets were to be published. It also authorized them to provide "for the collection of statistics and useful information concerning the climate, products, population, and resources of this State, together with a statement of the best routes to this State from the large cities of Europe, and for printing the same" in those languages.

A few days after the Act was again amended in a way intended to encourage the people of the State to interest themselves in the movement. The Board had one member appointed by the Governor from each Congressional District, and he and the Secretary of State were made ex officio members. The Governor was also to appoint, with the approval of the Board, a committee of three in each county, to assist the State Board by looking after the interests of their own county. These county committees were to obtain lists of the names and post office addresses of such friends and relatives of the inhabitants of their respective localities as were living in the Eastern States and Europe. A copy of the list was to be sent to the State Board, and by them the county committees were to be supplied with documents to mail to these addresses and postage to send them. Further to interest the counties, the Board of Supervisors might authorize the committees to prepare and publish special documents concerning the attractions and advantages of their own county, at the expense of the County Treasury. These documents the committee were at liberty to mail with those supplied by the State Board.

The State Board were authorized to offer prizes to authors for suitable immigration documents; copyright those accepted, and publish them; and also publish communications in foreign and Eastern papers, paying only the cost of composition and transmission. None of the Board were paid for their services, and only three thousand dollars was placed at their disposal to carry out these objects.

In eighteen hundred and seventy-one the experience gained had shown that the amount of work which could thus be profitably performed was sufficient in importance to make it worth while to pay some one to attend to it properly, and not merely devolve it as unpaid work upon officers having other duties to attend to, for which alone they were paid. A new Act was passed by which the office of Commissioner of Immigration was created—the first appointed, his successors to be elected. All the duties of the old Board were devolved upon him, and their records

placed in his charge. He is "annually to prepare a pamphlet calculated to give all useful information concerning this State, showing briefly and concisely its developed and undeveloped agricultural and mineral resources, the quantity of land in the State belonging to the United States and subject to preëmption or entry under the homestead law; the quantity for sale belonging to the State and to railroad companies; the average price thereof; a general description of the climate, qualities of soil, productions and productiveness thereof; timber, water power facilities for manufactures, for navigation and commerce, railroad connections, present and prospective; and all other information, statistical or otherwise, tending to show the attractions and advantages which the State offer to immigration, and the facilities for reaching the same."

The same plan of county committees was retained, but their appointment given to the Commissioner. He was also authorized to appoint agents abroad, without compensation or power to incur any expenses unless authorized by the Commissioner in pursuance of law. (Such agents would probably be ticket agents of well established railroad or steamship lines, whose agency and supply of pamphlets, etc., would increase their business.)

He was to appoint a local agent at Chicago for four months in the year, at seventy-five dollars per month, and to act himself as local agent at Milwaukee. He was to endeavor to arrange with railroad companies for reduced fares for immigrants, to coöperate with the Bureau of Immigration in Washington so far as he can with advantage to this State, to give his time and attention to the subject of immigration, to distribute pamphlets and disseminate information wherever in his judgment it will be most beneficial, and to do his utmost with the means placed at his disposal to promote immigration to this State.

He is to report annually his labors, expenditures, results thereof, with such references, suggestions, and statistics as may furnish reliable data for future legislation on the subject.

Five thousand dollars were appropriated for his salary and to cover all the expenses to be incurred under the Act.

Thus, though all the legislation has been characterized by extreme economy, the appropriation has gradually been increased, as the facts and results satisfied the people and the Legislature that such appropriations were useful and remunerative.

Samples of the publications by the States of Iowa and Minnesota under these Acts are herewith exhibited, as also the report of the Secretary of the Iowa Board of Immigration.

LEGISLATION IN KANSAS.

The Legislature of Kansas, by an Act approved February twenty-ninth, eighteen hundred and sixty-four, entitled "Immigration to Kansas—an Act supplementary to an Act entitled an Act to enable the trustees of colleges, academies, universities, and other institutions, societies, and companies to become bodies corporate," approved February ninth, eighteen hundred and fifty-nine, provided for the formation of corporations for the promotion of immigration to the State of Kansas, giving them all the usual powers of corporations, to contract and be contracted with, acquire and convey at pleasure all such real and personal property as may be necessary and convenient to carry into effect the object of the incorporation, and do all needful acts to carry into effect the object for which it was created, etc.

By another Act approved February twenty-sixth, eighteen hundred and sixty-four, a Bureau of Immigration was created, as follows:

BUREAU OF IMMIGRATION—AN ACT TO ESTABLISH A BUREAU OF IMMIGRATION AND APPOINT AGENTS THEREFOR.

Be it enacted by the Legislature of the State of Kansas:

SEC. 1. That the Governor be and he is hereby empowered to appoint, by and with the consent of the Senate, two Commissioners of Immigration, who together with the Governor shall constitute a Bureau of Immigration, which shall have power to appoint one or more agents to visit Europe for the purpose of encouraging and directing immigration to this State; to make contracts with railroad and packet companies for the purpose of securing a low rate of fare to immigrants, and to perform such other functions as may be necessary to secure the ends aimed at in this Act; *provided*, however, that said Bureau of Immigration or its agents shall not under any consideration involve the State in any indebtedness or expense in amount exceeding the sum appropriated by this Act.

SEC. 2. The Bureau of Immigration shall each year collect and compile for publication, in an annual report to the Legislature, and also in such other forms as they may judge best and necessary to aid the object of the Bureau, all statistics and facts relating to the character and resources of this State, the amount of money received and expended by them, and all such other information as shall be of general interest to the State and calculated to subserve the designs of this Act.

SEC. 3. It shall be the duty of the Faculty of the State Agricultural College, of the State Normal School, and of the State University, when organized, to carefully preserve a daily meteorological record, which, with all such other information relative to soil, minerals, and all other scientific facts bearing upon the resources of the State that such Faculties may be able to gather, shall be forwarded for publication to the office of the Bureau at the Capital.

SEC. 4. It shall be the duty of the County Assessors of the several organized counties in the State to prepare annually a report of the amount of lands in their several counties, what proportion may be vacant, what under cultivation, and all such other information as they may possess tending to increase a knowledge of the various counties of the State, and forward the same to this Bureau.

SEC. 5. It shall be the duty of the State Geologist to prepare an abstract of such investigations as he may have made as to the soil, minerals, coal, salt springs, and other information which came within the legitimate duty of this office to gather, at such times as the Bureau of Immigration may require.

SEC. 6. That the sum of five thousand dollars ($5,000) be and the same is hereby appropriated out of any moneys not otherwise appropriated, for the purpose of defraying the expenses of agents to be sent to Europe, and other expenses incidental to the operations of this Bureau; and the Governor is hereby empowered to direct the Auditor to draw his warrants upon the Treasurer for such amounts as the Bureau shall deem proper, not exceeding the above amount. Such vouchers to be marked "Immigration Fund," and the State Treasurer shall pay each at sight.

SEC. 7. The aforenamed Commissioners shall enter upon their duties on the first day of April, A. D. eighteen hundred and sixty-four, and

remain in office for one year, and shall take the required oath of State officers, and shall each give bonds in the amount of two thousand dollars (2,000), to be approved by the Governor, conditioned to faithfully perform the duties required by their appointment and this Act.

SEC. 8. The Bureau of Immigration shall, as much as possible, encourage and try to effect the organization of a State Immigration Society, which shall coöperate with this Bureau in aid of immigration.

SEC. 9. This Act shall take effect and be in force from and after its passage.

Thus the State Board was directed to try to awaken interest enough among the general public in the matter of hastening the population and development of the resources of the State to secure the organization of a private association to coöperate with the State officers who had State funds at their disposal, and facilitate the settlement of immigrants in the different counties.

Here, the public have been in advance of the Legislature, and such an organization now exists and has been in active operation for over two years, and offers its services to the State, and the public spirit and disinterested motives and objects of its members, as well as the character and standing of its officers, speak for themselves as to the consideration to which its application is entitled.

In the "Act making appropriations for miscellaneous expenses, approved March third, eighteen hundred and seventy-one," occurs the following paragraph:

"For immigration purposes, the sum of twenty-five hundred dollars; the said sum to be expended by the Governor in purchasing twenty-five hundred copies of a book now ready for publication, entitled 'The Resources and Development of Kansas; Fifteen Years Experience; with a new map and twenty-five illustrations; by C. C. Hutchinson.' Five copies of said book shall be placed at the disposal of each and every Senator and Representative of the present Legislature, to be distributed by them outside of Kansas, and the remainder of said books shall be distributed by the Governor in such manner as he shall deem best calculated to call attention to the resources and advantages presented by the State of Kansas."

Also another paragraph, as follows:

"That the sum of twenty-five hundred dollars is hereby appropriated for the purpose of collecting and publishing such information and statistics as are best calculated to induce and aid immigration to the State; and that for the same purpose the further sum of twenty-five hundred dollars is hereby appropriated to pay the necessary expenses of collecting, transporting, and exhibiting the agricultural products of Kansas at the industrial exhibitions of the East, during the year eighteen hundred and seventy-one. The moneys hereby appropriated shall be paid to the Kansas Immigration Society, on presentation by the said society of vouchers setting forth in detail the disbursements of the society for the purpose or purposes hereinbefore named, verified by affidavit of its President and Secretary, and approved by the Governor and Secretary of State."

Thus Kansas appears to be very much in earnest in its efforts to make

its advantages and attractions known abroad. The result of its earlier appropriations of State moneys was the organization of a large and public spirited private association, which is appreciated, encouraged, and aided by the State, and which has demonstrated to private landowners that it will pay them handsomely, and better than any other course, to subdivide and sell their lands to actual settlers, and to take all necessary means to advertise them and attract purchasing settlers from abroad. As a result, Kansas has filled up rapidly with an enterprising and intelligent population and taxable wealth, and not only that State but the entire West has been benefited by the enterprise developed, and the new and productive population attracted, when public attention was once fairly turned in that direction.

From the accompanying statement it will appear that the work performed by the California Immigrant Union for the past two years has been of precisely the same character in every respect as that thus devolved upon State officers, and paid for from the Treasuries of other States, to the extent of the means at its disposal. And its records are open to the fullest examination of all who are interested in the subject of immigration or any of the matters to which they refer.

GAINS IN MINNESOTA.

In the United States Land Office report for eighteen hundred and seventy-one, the United States Surveyor General for Minnesota reports:

"The established fact that the Northern Pacific Railroad will be completed to the Red River this season is causing a volume of immigration to the northwestern portion of the State, unprecedented in any previous year. In Otter Tail and Beker Counties, settlements are being made with astonishing rapidity. It is estimated that along the line of the Northern Pacific Railway and in the region above mentioned not less than thirty thousand inhabitants will be added to the permanent population of the State during the present season. Other parts of the State have also received large accessions of settlers during the year."

GAINS IN NEBRASKA.

The United States Surveyor General of Nebraska in the same volume reports:

"Immigration to Nebraska during the year eighteen hundred and seventy-one, has been unusually large, and the progress of the State in material development correspondingly rapid. A careful estimate based upon statistics obtained from the State Superintendent of Immigration and from other reliable sources, places the total increase of population during the year by immigration at about seventy-five thousand. This large influx is to a great extent due to the systematic efforts of the State Board of Immigration and the railway companies, in making known the superior inducements the State offers the settler and for the profitable employment of capital and labor.

"An interesting feature of this remarkable increase is the establishment of numerous colonies through the instrumentality of those railroad companies owning land granted by the general Government, which they offer

to sell in large quantities and on long credit. The magnitude and extent of these colonies' settlements may be inferred from the fact that the Burlington and Missouri River Railway company has alone located during the year nine colonies, all reported in a prosperous condition, and that one of these colonies located by the Union Pacific Railway has negotiated with that company for land sufficient to accommodate one thousand families."

The Commissioner of the General Land Office, in the same volume, (report of eighteen hundred and seventy-one), says:

"The emigration to the States west of the Mississippi during the last year has been unprecedented.

"In Kansas and Nebraska, during the fiscal year ending June thirtieth, eighteen hundred and seventy-one, there were fifteen thousand three hundred and sixty-seven entries made under the homestead law alone, adding that number of farms to these commonwealths and representing a population of not less than fifty thousand persons. Of these, the larger portion have sought Kansas as the field of their labors. While these two States have been leaders in the progress of settlements, Minnesota and Dakota show a material increase in their productive forces, more than sixteen thousand five hundred persons having entered homestead and preëmption claims in these communities during the last year. A very large proportion of these entries are made by persons from the various nations of the old world."

This, it will be remembered, was during a year in which the average gain of California was sadly falling off.

IMMIGRATION DOCUMENTS OF OTHER STATES—PRICES OF THEIR LANDS, ETC.

Iowa.—The abstract just given of the Acts creating these State Commissioners and Boards of Immigration sufficiently indicates the means resorted to by them to attract immigrants to their respective States. They consisted in a judicious system of advertising the cheap lands, good climate, liberal laws and institutions, provision for free public education, the undeveloped resources, and other attractions their States had to offer to newcomers. A reference to two of their pamphlets will be interesting for several reasons. The first consists of ninety-six pages and is entitled:

"Iowa, the Home for Immigrants: being a treatise on the resources of Iowa, and giving useful information with regard to the State, for the benefit of immigrants and others. Published by order of the Iowa Board of Immigration. Des Moines; 1870."

In this pamphlet the Secretary of the Board announces that "the present edition of this pamphlet consists of thirty-five thousand copies in English," and that "there are also published fifteen thousand copies in German, six thousand copies in Norwegian, four thousand copies in Swedish, and five thousand in Dutch." What subsequent editions have been published and circulated by the same Board I am not advised.

The result of this style of legislation to increase population and taxable property is indicated in the following sentences:

"As compared with other States the rates of taxation are low in Iowa —the levy for all State purposes being but *two mills* on the dollar. In

some counties or districts the people voluntarily impose additional taxes upon themselves for building schoolhouses and various other local improvements which enhance the value of their property and by which they are directly benefited. The financial condition of Iowa is not equaled by any other State in the Union."

The table elsewhere given shows that in the past ten years Iowa has gained in population five hundred and sixteen thousand eight hundred and eighty-nine, a number equal to about nine tenths of the entire present population of this State, and has a population double that of California in an area only one third as large as ours; and has, according to this pamphlet (page 57), only a quarter of a million of acres of Government land remaining within her limits, and her people on the average are poorer than ours. Yet Iowa is here stretching out her arms for more population, and wanting more poor men within her limits, for her people understand that population is wealth.

Let us next see how lands in Iowa are situated and the terms on which they are obtainable, and what are the inducements to settlers there which have proven so sufficient to attract them. On page fifty-seven I find the following paragraph :

"*Government Lands.*—All the Government lands yet remaining to be taken are situated in the northwest part of the State, and may be estimated at a quarter of a million of acres. The larger portion of them are situated in the Counties of Oseeola, Lyon, Sioux, and Plymouth. They are only in the market to be taken by preëmption or as homesteads. This is a wise arrangement; for if they were subject to 'private entry,' speculators would soon have them. As it is, they must pass from the Government into the hands of actual settlers."

There is instruction for us as well as information in that paragraph. And if Iowa can afford to advertise on this scale to hasten the occupation and cultivation of her quarter of a million acres of Government land, what cannot the State of California afford to do to prevent her eighty million acres of Government lands continuing unimproved and unproductive? If Iowa has obtained from the General Government the boon of having her public lands reserved for actual settlers at Government rates, why may not California have the same benefit conferred upon her? And why should not the same policy be adopted as to our remaining State lands? I submit these questions for the earnest consideration of our legislators.

But Iowa does not merely advertise this quarter of a million acres of Government lands as constituting an attraction for settlers. Her legislators took a far wiser view of their duty and the true policy of the State. Iowa's public lands had, prior to eighteen hundred and seventy, as these figures indicate, passed not only into the hands of actual settlers, but largely into the hands of land speculators, and as grants and subsidies to railroad corporations. There was the same deprecation of land monopolies there as here. There is, however, no means known to American law for taking land away from actual owners who hold without improvement, and distributing it in smaller parcels among those who desire to settle upon and improve it. The Legislature appreciated the evil, and, after due consideration, adopted the only possible and sensible remedy. It was:

First—Prevention for the future, secured by persuading the General

Government to withhold from "private entry" the public lands remaining within her limits and reserve them for actual homestead and preëmption settlers; and,

Second—To break up existing unproductive monopolies by liberally advertising these private and railroad lands, so as to attract there purchasers who would buy small tracts and farm and improve them, enhancing their value, increasing permanently the State and county revenues from taxation, and dividing with the older population the burdens which the maintenance of any government imposes.

Doubtless there were not lacking those who opposed this policy on the ground that "railroad companies and land speculators would profit by it more largely than any other class." But no public improvement or expenditure of public money can be made without some few private individuals profiting more than others. If, however, the permanent benefit to the general public is far greater than the mere temporary profit to the few, and when this profit is once realized, the evil complained of ceases and is removed, such expenditure of public funds is the greatest possible economy, and a profitable investment. The expenditure required for this purpose may also be regarded as the unavoidable penalty of the unwise legislation which created the evil. The only alternative is to suffer for an indefinite period the evil which delays the development and advance of the State, taxes existing industries too heavily and discourages others from coming to create new taxable property, and thus diminish the rate of taxation.

Let us now see what are the lands advertised as offering inducements to settlers, other than the public lands.

On page forty-six of this pamphlet it is stated that "superior facilities for acquiring cheap lands in Iowa are now offered to actual settlers by several of the land grant railroad companies. Knowing that the business of their roads depends upon the development of the country through which they pass, they have wisely brought their lands into the market, and upon such terms as must result in their speedy sale and settlement. * * * * It is a really gratifying fact that these corporations prefer to have this vast and rich domain pass into the hands of actual settlers who will render it productive. This liberal policy will result not only in great advantage to the thousands who may become land owners, but to the corporations themselves."

On pages forty-seven and forty-eight the Burlington and Missouri River Railroad is stated to have received three hundred and eighty-six thousand one hundred and eighty acres, which were then "in the market at prices ranging from five dollars to fifteen dollars per acre, depending upon quality and local advantages. The cheapest lands are back from the railroad, mostly within ten and none more than twenty miles from it." * * * * "They will sell in lots of forty acres or more on ten years credit, with six per cent interest. If full payment is made at the time of purchasing, twenty per cent is deducted from the long credit price."

On pages forty-nine, fifty, and fifty-one the Chicago, Rock Island, and Pacific Railroad is stated to have received grants amounting to six hundred and six thousand three hundred and twenty-five acres. "The prices range from five dollars to ten dollars per acre, with some few tracts at higher figures. The prices are now low—below those asked for similar lands in the same neighborhood." Thus, newcomers to obtain private lands must pay higher than railroad land rates; and as this railroad "passed through many of the earliest and most closely settled

counties in the State, and therefore through lands which were even at that early day (eighteen hundred and fifty-six) already occupied and improved," it there obtained few or no lands under its grant, and newcomers desiring to settle there must pay prices fully as high as those asked in Santa Clara, Napa, or Sonoma—corresponding counties in this State.

In Honorable Edward Young's Report on Immigration, from the Bureau of Statistics, in Washington, at page eighty-two, from the reports of local Assessors of Internal Revenue, it is stated that in Iowa small improved farms, partly fenced and partly cultivated, with frame buildings, sell as follows: Lee County, twenty dollars to seventy-five dollars per acre; medium quality, fifty. Scott, twenty-five to two hundred dollars; one half under cultivation. Jackson, twenty dollars to twenty-five dollars; wooden dwellings; no barns. Clayton, twenty dollars to fifty dollars. Kossuth, six dollars to twenty dollars, according to location; some of the improved farms are unfenced, cattle in some neighborhoods being herded; frame buildings. Jasper, from twenty-five dollars to forty dollars; farms about two thirds fenced and not cultivated; small frame buildings. Other counties generally range from fifteen dollars to thirty-five dollars and forty dollars. Unimproved lands range in different counties from five dollars to twenty dollars; timber lands from ten dollars to thirty dollars and forty dollars; prairie, five dollars to twenty dollars, and in a few cases one dollar and fifty cents and two dollars and fifty cents per acre. Rents of farms range from two dollars and fifty cents to fifteen dollars per acre—usually two dollars and fifty cents to five dollars; or at one third, two fifths, or one half of the crop. I submit that there is no difficulty in matching these inducements to settlers in almost any portion of California not in the immediate vicinity of San Francisco, and it is not likely to damage the State by letting the fact be known.

On pages 51 to 53 the Cedar Rapids and Missouri River Railroad and the Iowa Falls and Sioux City Railroads, are stated to have lands in thirty counties, amounting to one million and thirty thousand three hundred and eighty-nine acres. "The lands offered by this company vary in price from three to twelve dollars per acre. At the latter price persons can secure very choice locations within two to four miles of important stations. A few tracts nearer stations are held at still higher figures. Further from the stations six dollars to ten dollars per acre, and six to twenty miles from the railroad at five and six dollars per acre. * * * * The price of timber lands varies much according to location and quality from fifteen dollars to forty dollars per acre. * * * * From Sioux City down the Missouri River Valley "lands range from five to ten dollars per acre." For "the lands belonging to the Iowa Falls and Sioux City Railroad, a magnificent grant embracing about seven hundred thousand acres * * * on either side and within fifteen miles of the railroad, the terms of sale are the same as for the lands belonging to the Cedar Rapids and Missouri River Railroad grant."

On pages fifty-four to fifty-six the Des Moines Valley Railroad is said to have land amounting to three hundred and sixty-two thousand nine hundred and ninety-seven acres. "The prices range from four dollars to twelve dollars per acre, averaging about eight dollars per acre." And to show how valuable these lands are and how great the inducement to purchase, it is added: "The excellent quality of these lands would very soon enable the purchaser to pay for his home from the products of the

soil. It has very often been demonstrated in Iowa that the first crop of wheat, at one dollar per bushel, will pay for the land at ten dollars per acre, as well as for breaking and fencing."

In California, where the cost of breaking land is less than in Iowa, and particularly where a "no fence law" operates, our farmers can do quite as well, and there is no reason why we should not say so. And with eighty millions of acres of Government land yet undisposed of and open to homestead and preëmption entry, and railroad grant lands selling at prices as low as those above mentioned, California offers inducements to settlers fully equal to the above, and would probably attract immigration as successfully if due care were taken to make her attractions and resources known.

In each of the above cases the names and locations of the land offices and agents of the railroad companies are carefully given, that they may be found or addressed by letter.

The pamphlet contains a variety of other information likely to be of use to newcomers to which I cannot refer, among which, however, are laws exempting from taxation for ten years one hundred dollars worth of real and personal property for each acre planted in forest timber; fifty dollars for five years for each acre planted and cultivated in fruit trees; and county authorities are authorized by law to make similar exemptions from county taxes for shade trees planted along public highways, and for hedges, not to exceed five hundred dollars for each mile of the former and for each mile of the latter. Thus Iowa wisely omits no means to increase her taxable property and make the State inviting to permanent settlers. The facts concerning the railroad grants in that State show that railroad companies do not sell their lands for much less than the market value of similar lands; that the existence of similar grants in this State need not be considered an unmitigated evil and a hindrance to settlement, as some profess to consider them, and point out to all such the true means to be taken by a State to hasten the process of passing them into private ownership.

LANDS IN MINNESOTA.

I have also before me the immigration pamphlet of eighty pages entitled: "Minnesota, its resources and progress, its beauty, healthfulness, and fertility, and its attractions and advantages as a home for immigrants. Compiled by the Commissioner of Statistics, and published by direction of Horace Austin, Governor. St. Paul; 1871."

On page sixty-two of this pamphlet it is stated that "according to the latest surveys and estimates the total area of Minnesota is fifty-one million seven hundred and one thousand seven hundred and sixty acres. Of this there are in the hands of private owners about eleven million acres; held by railroads, schools, etc., about eleven million acres; being a total absorbtion of twenty-two million acres of the public lands, and leaving an area of thirty million acres (more than half the entire State) for the landless and poor of all nations of the earth to enter on and possess. Here is a domain abounding in all the elements of health, beauty, and fertility; an area nearly as large as all the New England States, larger than many of the principalities of Europe, which awaits the developing hand of the frugal and industrious among all classes and conditions of men."

The liberal provisions of the United States land laws (which of course

apply equally to the eighty million acres of public lands in this State) are then explained at length.

As to other lands, on page sixty-eight, concerning State lands donated by Congress to the endowment of public schools, the State University, and an Agricultural College, it is said:

"An excellent system for the *gradual sale* of these lands has been devised. They are placed under the control of the State Auditor, and provision is made for their appraisal at a price *not below five dollars per acre*, and each year a quantity of these lands is offered at public sale in the several counties. The purchaser is required to pay in cash fifteen per cent of the amount of his bid for prairie lands, and twenty-six to seventy-five per cent for timber land, according to the value of such timber. On the remainder of the purchase money the purchaser is granted a credit of twenty years at seven per cent interest, payable yearly in advance, or he may at any time within that period pay the whole amount, receive a deed at once, and thus stop the accruing of interest. *These advantageous terms attract crowds of purchasers at the annual sales.*"

If there is any advantage in the California plan of forcing the school lands at the rate of one dollar and twenty-five cents per acre far in advance of settlement into the hands of speculators who will not improve and occupy them, and usually pay but five dollars on account, and then merely hold to forestall and exact a large profit from those who may afterwards come here and desire to farm and improve them, so far as the price is concerned it is in favor of purchasers here who are fortunate and enterprising enough to obtain the bargains offered.

Railroad lands are said to be for sale (page sixty-nine) by the Southern Minnesota Railroad at from three dollars to five dollars per acre upon long time, with reasonable interest. The Union and St. Peter Railroad confine their sales to actual settlers, to whom they offer land at five dollars per acre, the purchaser paying three years interest in advance, at seven per cent, and the principal after the expiration of that time in four annual installments. The St. Paul and Pacific Railroad Company sell their lands at five dollars to ten dollars per acre, cash, or on ten years credit, at seven per cent interest. The Lake Superior and Mississippi Railroad Company sell their lands at from four dollars to eight dollars per acre, and on long credit, at seven per cent interest. Among these lands "there is little or no prairie; but they comprise a variety of openings and forests of pine and hard wood, and abound in meadows and lakes and deposits of minerals;" a description which would apply to our upper foothill or mountain valley regions, nearly all of which in California is Government land, open on Government terms to actual setters.

The St. Paul and Sioux City and the Milwaukee and St. Paul Railroads offer lands at from five dollars to ten dollars per acre, one tenth cash, one tenth in one year, and balance in four equal annual payments, with interest at seven per cent.

As to unimproved private lands, it is stated in Hon. E. Young's Report on Immigration, at pages seventy-eight and seventy-nine, the price of unimproved land in Minnesota to be as follows: Wabashaw County, two dollars and a half to fifteen dollars per acre; Washington, two dollars and a half timber, prairie, twenty dollars; Hennepin, twenty-five dollars to seventy-five dollars; Goodhue, five dollars to fifteen dollars; Ramsey, six miles out, with no clearing or fencing, seven dollars;

Stearns, ten dollars to thirty dollars; Anokee, two dollars and a half to six dollars, part timber and part prairie, not much of it fenced; Dakota, two dollars, mostly prairie; Le Sueur, four dollars to twenty dollars, none cleared, none fenced; Blue Earth, ten dollars, prairie land eight dollars to twenty-five dollars, without fencing; Winona, from five dollars to fifteen dollars, no choice lands vacant, etc.

Small improved farms: Washington, ten dollars to thirty-five dollars per acre; Wabashaw, from ten dollars to forty dollars; as a general rule about half the land is plowed and fenced, each farm having a small log or frame dwelling and straw covered stable; Goodhue, fifteen dollars to fifty dollars per acre, according to amount of improvements; Stearns, average, twenty dollars per acre; Olmstead, fifteen dollars to thirty-five dollars; Le Sueur, five dollars to forty dollars, one quarter under cultivation and fenced; Winona, ten dollars to thirty dollars per acre, log or small frame buildings, etc., etc.

Rents of small improved farms are said to be: Washington, three to five dollars per acre, or one third crop to owner, who furnishes only the land; Wabashaw, three dollars to five dollars, if on shares one half, the owner providing one half the stock, implements, and seeds. Other counties the same. Le Sueur owner receives one quarter and furnishes nothing, otherwise one half, etc., etc.

In all these respects Minnesota has no advantages over California.

As to unimproved private lands, it is stated in the Minnesota pamphlet that "they can be purchased, accessibly situated among settlements, and frequently within five to eight miles of large towns, which afford good markets for vegetables and dairy products, at from four dollars to fifteen dollars per acre, partially upon credit. Lands of fair quality are offered at five dollars to twenty dollars per acre, within ten miles of St. Paul, a city of twenty thousand inhabitants, where high city prices are eagerly paid for all garden and dairy products, and where manure for enriching second rate lands is gladly given to farmers who will haul it away. Similar opportunities are presented in the vicinity of other large and growing towns. Farms of various degrees of improvement are frequently offered for sale at from twelve dollars to forty dollars per acre, *such price being often less than the cost of the buildings and fences.* These cases occur not from the undesirable character of the property so much as from the restlessness and love of change characteristic of Western people."

Probably if the attractions of the climate and soil of the Pacific Coast were properly laid before the farmers of Minnesota such cases would shortly be far more numerous than at present. A Californian reading the above is apt to imagine that second rate land is common there, or he may think that considering the rigor of the winter climate, lands there to live upon and cultivate are not worth more than such prices. Farmers there, also, hearing of the prices of cultivated land here may well desire to come to this State, where the rapid enhancement in the value of land will alone enrich them faster than the rates indicated above. And this paragraph itself, as well as correspondence on file in the office of the California Immigrant Union, will serve to show that Minnesota presents a fine field for the operations of an Immigration Agent from California.

SOURCES OF IMMIGRATION AND RESULTS.

With a few further extracts from the Minnesota pamphlet as to the the results of immigration in these States and the sources from whence it

has been derived, I leave this branch of the subject. On page fifty-five and following pages it is said:

"It is estimated that of the four hundred and seventy thousand of the inhabitants of Minnesota, two hundred and sixty thousand are of American ancestry, and two hundred and ten thousand foreign born, probably in the following proportions:

From the several German States	90,000
Scandinavians	65,000
Irish	45,000
Other countries	10,000
Total	210,000

"In eighteen hundred and sixty-four the number of landowners was fifty thousand eight hundred and five; in eighteen hundred and sixty-nine, seventy-three thousand one hundred and twenty-one; showing an increase in five years of twenty-three thousand three hundred and sixteen, or forty-three and nine tenths per cent. Number of improved farms in eighteen hundred and sixty-four, twenty three thousand seven hundred and eighty-seven; in eighteen hundred and sixty-nine, forty-five thousand seven hundred and forty; being an increase in five years of twenty-one thousand nine hundred and fifty-three, or ninety-two and two tenths per cent, exhibiting the fact that while the number of landowners has increased forty-three and nine tenths per cent—which is a gratifying circumstance, as evincing the distribution of landed wealth—the development of such wealth, as shown in the improvement of farms, has advanced ninety-two and two tenths per cent, or more than twice as rapidly.

"Similar movements are seen relative to lots within the various cities and towns, as shown by the following statement: number of lotowners in eighteen hundred and sixty-four, twenty-five thousand and eighty-four; in eighteen hundred and sixty-nine, thirty-seven thousand five hundred and eighty. Number of improved lots in eighteen hundred and sixty-four, fourteen thousand nine hundred; in eighteen hundred and sixty-nine, twenty-three thousand eight hundred and forty-two. Whole number of acres of improved farms in eighteen hundred and sixty, four hundred and thirty-three thousand two hundred and sixty-seven; in eighteen hundred and sixty-four, five hundred and seventy-five thousand; and in eighteen hundred and sixty-nine, one million six hundred and ninety thousand."

As to Iowa, in the pamphlet issued by that State, on page sixty-seven, it is said:

"In eighteen hundred and fifty, of the whole population, one hundred and twenty thousand two hundred and forty were natives of others of the United States, and fifty thousand three hundred and eighty were born in Iowa; while only twenty-one thousand five hundred and ninety-four were foreign born. In eighteen hundred and sixty there were three hundred and seventy-six thousand and eighty-one natives of others of

the United States, sixteen hundred and three born at sea or nativity unknown, and one hundred and ninety-one thousand one hundred and forty-eight born in Iowa; while one hundred and six thousand and eighty-one were natives of foreign countries."

The figures are also given which show whence these additions to their population were drawn. They are instructive, as showing whence we may hope to increase our own population by immigration.

From these it appears that the gains in American population from eighteen hundred and fifty to eighteen hundred and sixty were as follows:

From New England States	19,505
From New York	37,919
From New Jersey	2,915
From Pennsylvania	37,412
From Ohio	68,427
From Indiana	37,630
From Illinois	19,449
From other Western States	9,020
From Southern States	23,464
The gain by births in Iowa was	140,768

The gain by immigration of natives of foreign countries from eighteen hundred and fifty to eighteen hundred and sixty was as follows:

From England	7,737
From Ireland	23,187
From Scotland	2,183
From Wales	665
From German States	31,302
From Holland	1,507
From Scandinavia	7,203
From France	2,039
From other European countries	2,572
From British America	6,657

I regret that I have not the means of supplying the figures for the years since eighteen hundred and sixty. These, however, sufficiently point out the fields in which documents setting forth the attractions and advantages of California may be circulated with the hope of obtaining the best results, and that more may be accomplished in our own country, perhaps, than abroad, for the reason that here a greater number are readers and possess the means necessary to enable them to reach here and settle upon land as farmers. I would also call attention to the advertisement on the back of the pamphlet by the Commissioner of Immigration for the State of Minnesota, located in the City of New York.

The statements concerning other States as to the inducements they present to immigrants could be quoted with like results and compared

with those of California, but space will not permit. Enough has been said to show that California does in fact present inducements to farmers of moderate means fully equal to the States that now, merely by reason of their being nearer to the older Eastern States, now successfully compete with us for new population; and that as we can fairly and honestly assert this of our State, her interest requires that we should do so, and seek at once to secure the enterprise, wealth, and advancement which immigration always brings with it. Even if this were not the case, experience shows that the article which is most thoroughly advertised is the one which secures most purchasers, though a better article, which is not judiciously and liberally brought before the public, is in the market.

ADVERTISING IN FOREIGN COUNTRIES.

To show that advertising the resources and attractions of a State in foreign countries has its effect, it is only necessary to refer to the table on page seventy-five of the Report of the Commissioners of Emigration of the State of New York for the year ending December thirty-first, eighteen hundred and seventy (the later report not having yet come to hand). In the table giving the avowed destination of passengers landed at Castle Garden during eighteen hundred and seventy, among others, the number registering themselves as bound for California is given at three thousand three hundred and seventy-four; for Illinois, whose railroad lands have been very widely and liberally advertised, twenty-two thousand five hundred and three, while for Indiana, an adjoining State, there were only two thousand eight hundred and ninety-three. Iowa had six thousand one hundred and forty-nine, or nearly twice as many as California; Kansas, two thousand four hundred and ninety-five; Michigan, five thousand nine hundred and thirty-six; Minnesota, four thousand five hundred and eighty-two; Wisconsin, nine thousand and seventy-seven; while Oregon only had sixty-one, and Washington Territory nine. From this it appears that these foreigners had, in their own countries, heard or read sufficient concerning the resources and attractions of the States mentioned to determine them before leaving home as to where they would go to find places for settlement. I do not suppose that all these, in any case, had been secured by a single season's operations, for several of these States have been advertised officially and otherwise for years past; but these figures show that the result was certain and satisfactory. Texas is said within a few years past to have secured fifteen thousand German families. Supposing each family, upon the average, to have brought with them or created one thousand dollars worth of new property, fifteen million dollars has thus been added to her wealth.

HOW TO RETAIN POPULATION WHEN ATTRACTED.

Sufficient has been said to show that it is a comparatively easy matter to attract immigrants on the plan proposed, provided the scale of operations is sufficiently extensive and liberal. The experience of other States demonstrates this. But experience also shows that having attracted people here in search of lands for settlement, something more, in justice to them and to ourselves, becomes necessary. We must do something then to keep them here. For this purpose we must facilitate their settlement by every means in our power. If the difficulties they encounter in finding lands to suit them are too great they become dis-

couraged and will return or go further, even though they fare worse. With all due deference, permit me to suggest a few of the measures which appear to be calculated to increase the attractions of this State for agricultural settlers, by facilitating their obtaining lands. Some of these have been already briefly alluded to.

INFORMATION FOR NEWCOMERS.

The first measure of this kind which appears to be desirable, is to increase the facility for obtaining information as to the lands that are actually open to settlers in the different counties of this State. The best plan that suggests itself is the obtaining by the State of copies of the United States surveys and field notes of all the surveyed townships in which there are yet Government lands undisposed of and open to settlement under the homestead and preëmption laws, or State laws. When thus procured and filed in the Surveyor General's office, copies of the plats of such townships should be filed in the office of the County Recorder or Assessor of the county in which they are situated, there to remain open to the inspection of all who desire to examine them. These plats should be obtained from the District Land Offices, and in addition to the descriptive field notes, should be accompanied by lists of all sales and dispositions of portions of such townships to date, showing the terms upon which such disposal was made, as whether by private entry, homestead, or preëmption, and by whom, and once in three months supplemental lists could be obtained and forwarded to the same offices, showing subsequent dispositions of such lands until none remained. With such records open to them in each county, newcomers could ascertain at once what lands, if any, were open for them to settle upon, and could, without unnecessary expense or delay, proceed to examine them if from the description furnished by the field notes they deemed them worth examining. The names of settlers on adjoining lands would also greatly facilitate their search, and the record of dates and terms of disposal enable them to detect merely fraudulent and colorable locations intended simply to mislead and keep off others who might desire to settle and improve such lands in good faith. Besides their value for this purpose, such maps and notes would also probably be worth far more than their cost to the State, by serving as the basis for a more complete assessment of lands and improvements similar to the plan of assessment by blocks and lots prevailing in San Francisco, under which omissions are almost impossible. Such records would also serve as the foundation for a history of the titles to lands in the respective counties, and it is possible that a reference to the dates of locations might occasionally furnish to the Assessor a hint of the existence of unrecorded patents from the United States to occupants, which would render the lands affected taxable at an earlier day than is now sometimes the case.

EXCLUSION OF SETTLERS FROM PUBLIC LANDS.

As the operation of the present Possessory Act as construed by the Courts is unsatisfactory and detrimental to the interest of the State, as well as discouraging and injurious to newcomers, in that it enables a single individual often to occupy a tract of thousands of acres of desirable land, the property of the General Government, without claim of title and without payment of taxes, excepting upon a few slight improvements, and frequently to the exclusion of many others who would be

glad to occupy the same in small parcels, it would appear that some amendment of this law is necessary. The State Courts now protect the actual possession of any occupant of unsurveyed Government lands without much regard to the extent of the possession. As large tracts so held are not usually cultivated, the interest of the State would be better subserved by such legislation as would limit the protection extended by the State Courts to tracts of a reasonable size, and facilitate the occupation of all vacant lands by as many cultivators of the soil as may be willing to live upon and improve them and obtain absolute titles as soon as possible. The interest of such occupants of large tracts is to discourage and delay their survey and sale by the General Government, and to exclude and drive off settlers. This latter they can now do by aid of the process of the State Courts, being able to maintain actions of ejectment founded upon their possession alone. While the pioneer is entitled to a preference over any later comer, this preference and protection should be limited to a moderate quantity of land, not much, if any, in excess of what he will be allowed to retain after survey by the Government, when the land is opened to location. An amendment or change in the law, by which, as other settlers enter a district in which the lands are yet unsurveyed, the few original occupants would be compelled to mark off claims not exceeding one hundred and sixty or three hundred and twenty acres, including their improvements where they reside, in the possession of which the Courts would fully protect them, while any surplus lands were left open to any others who desired to occupy and reside upon them, would at once open up to settlement a very large amount of good agricultural lands, would hasten surveys and increase the population of many counties now sadly needing it, and largely add to the amount of their assessment rolls. Under a recent Act of Congress, persons desiring to settle upon unsurveyed Government lands can petition for a survey, and by depositing the cost of surveying the township, can have a survey made. But to enter upon unsurveyed lands held by another, for the purpose of settlement, notwithstanding there is no doubt that after survey he will have to vacate the greater part of what he holds, they must risk the danger of personal collisions and become trespassers, and liable to litigation and expenses, as well as being regarded as intruders and unwelcome neighbors. As this occupation of tracts of unsurveyed lands, of unreasonable size and to the entire exclusion of others who would willingly settle upon and improve them, could not long continue without the assistance of the State Courts, the remedy is clearly within the power of the Legislature. The quantity of land that in its natural condition scarcely affords sufficient pasture for a single ox or sheep, would, if cultivated, often suffice for the maintenance of an entire family. And with the enactment of a general "no fence law," thousands of poor men would be able to settle upon and cultivate lands from which they are now excluded and where there would be no protection for their crops against the unherded stock of their wealthier neighbors.

The late United States Surveyor General for California, in his report to the Land Department for the year ending June thirtieth, eighteen hundred and seventy (United States Land Office Report, 1870, p. 466), says:

"The desire to acquire title to the public lands in larger tracts than one hundred and sixty acres is very prevalent, especially among the owners of large bands of sheep and cattle. In some districts remote from large towns, men of this class have surrounded tracts of one or

two or more thousand acres with rude brush fences, or have parcelled out an entire district in large tracts among themselves, with some tacit agreement to discourage the settlement of newcomers. When the United States Surveyor appears to subdivide these lands, they do what they can to discourage or retard his surveys. There has been some talk of applying to the Legislature or to Congress to pass laws sanctioning the occupation of certain classes of land in large bodies for the accommodation of these herdsmen. But some difficulties lie in the way of such legislation. One is the almost impossibility of getting a fair appraisement or classification of any lands that are to be sold in large bodies at a reduced price. The temptation will exist to include the best quality of lands in the classification.

"*Another and probably an insuperable difficulty is that where one voter clamors for the possession of one thousand six hundred acres of the public lands, ten other voters claim as good a right as he to one hundred and sixty acres each of the same land. It is not dificult to guess the result when the issue is fairly made.* The above remarks apply also to the question of disposing of large bodies of timber lands."

It is a question for this Legislature to decide whether the time for meeting this issue fairly and determining upon and establishing a policy in accordance with the rule of seeking the greatest good for the greatest number, and the interests of the many as against that of the few, has not fully arrived? As our agricultural population increases the difficulty above referred to increases also, and the evil of the present system works greater injury to the State. It is more important to have our lands occupied by men than by cattle. The rights of men are superior to the rights of cattle, and the interest of the State requires that no poor man shall be denied the right to live upon and cultivate a small tract of land and support his family, because a richer neighbor who has no better title or greater rights than himself desires to keep it unimproved, that his thousand cattle may range over a hundred hills, or a broad valley large enough for twenty farms such as are usually owned by comfortable farmers in the Eastern States. As the rights of these parties are equal, the prior possession of the one should be subject to the rights of all later comers to diminish it as their wants require until he is limited to the quarter section upon which he resides, and which upon survey he would be compelled to elect. Suitable provisions can readily be made by which this process will be peaceable and collisions avoided, and the Act of Congress providing for surveys on deposit of the costs by the settlers or those who desire to become such, would then be speedily invoked and all conflicting claims adjusted at once.

Another suggestion of the late United States Surveyor General is also wise and timely, and perhaps legislation to carry it into effect might be asked at the hands of the Congress of the United States with advantage. He says: "Some modification of the surveying laws or regulations seems to be called for in view of the immense tracts of rough mountain lands in this State, throughout which are dispersed small secluded valleys, where settlers are seeking to acquire a title and ask for subdivision surveys of particular tracts. It will probably be a long time before the public appropriations will be applied to those tracts, except for township lines. * * * * * In many of these cases only one or two settlers are willing to pay for a survey; the others prefer no survey, being holders of larger tracts than one hundred and sixty acres. * * * * If

some mode could be devised by which this retail business of subdividing townships could be carried home to a man's neighborhood, like a Justice's Court, and could be done by some surveyor living near by, without excessive formality and responsibility, and be audited and approved beyond appeal by some officer not over one hundred miles distant, it would be a boon to the settlers and greatly promote the rapid settlement of the country." And in view of the fact that settlement has generally preceded surveys, and when it is remembered that the sale of land at once reimburses the expense of the survey and much more, he urges that true economy demands that Government appropriations for that purpose be increased, and at least a system of township surveys be carried all over the State.

If the Government land is reserved for actual settlers in small tracts, the earlier the surveys are made the greater will be the inducements to agricultural settlers to locate upon the land. Too great haste in passing the public lands into private ownership in advance of settlement and before we have the population necessary to occupy and improve them, defeats the very object in view. It diminishes the revenue of the State by delaying improvement, since large purchasers do not as a general rule either occupy or cultivate land, and it discourages immigration by raising the prices of desirable lands and lessening the opportunities for men of moderate means to acquire them.

A land policy which will favor poor settlers rather than rich land operators, by reserving the lands yet unsold for their occupation; lessening the cost and trouble of obtaining information as to the lands that are actually open to them; diminishing the expense of settlement by doing away with the necessity of fences to protect their crops and plantations, will enable our State to offer greater inducements to the immigration of the farming classes of Europe, England, and the older States east of the Mississippi, than any of the newer States and Territories that now successfully compete with us for population, and that without any gold mines or promises of sudden wealth are filling their borders with sturdy, industrious, enterprising, and economical taxpaying producers of wealth and prosperity. This class is ready to flock in numbers wherever lands are good and cheap, and men with strong arms and willing hands are appreciated and welcomed as they deserve. Let it be known that California reserves her vacant lands for such and invites them to her shores, and lay the inducements presented by her soil, her climate, and her great mineral wealth before them, and very shortly a tide of immigration will set in such as has never yet been seen, until every nook and corner as well as the broad valleys of the State will be filled with a prosperous and contented land owning, agricultural population, commerce, manufactures, and mining will reach a development as yet undreamed of, and California will commence to fulfill her destiny.

Now is the time to inaugurate the movement to hasten such a consummation on a scale commensurate with the end in view. The droughts which for two years have discouraged immigration and agricultural operations have passed away, and plenteous rains have insured a year of unprecedented prosperity. Those who come here during the present year will send back favorable reports to all their friends, who await tidings of their success and the prospects ahead for those who follow. The statements made in the immigration documents already circulated will be acknowledged to be below the mark and worthy of the fullest confidence, as is the fact, and every effort made by the State will be backed up and supported by the testimony of witnesses upon the spot. Foreign

capital seems now ready to invest in the most costly enterprises for the reclamation of our swamp lands and the irrigation of our dry plains. Its representatives, men of great experience and the highest scientific attainments, after the most careful examination report that no fairer and more promising field for such investments exists upon the face of the earth. If we exhibit a want of appreciation or confidence in our own resources we may again continue indefinitely to suffer from hopes deferred, and the flow of population to our shores will diminish still more, for capital is timid, and the gods help only those who help themselves.

Respectfully submitted.

CHARLES S. CAPP,
Manager California Immigrant Union.

San Francisco, January 23d, 1872.

APPENDIX.

LIST OF OFFICERS

OF THE

CALIFORNIA IMMIGRANT UNION.

HONORARY COMMITTEE.

His Excellency Henry H. Haight, Ex-Governor of California.
Hon. T. H. Selby, Ex-Mayor of San Francisco.
Ex-Governor J. G. Downey, Los Angeles.
D. J. Oliver, merchant.
Morris Speyer, merchant.
C. Christiansen, of Auger, Christiansen & Co.
Jos. A. Donohoe, banker.
G. Mahe, Director French Savings Society.
Ex-Governor Leland Stanford, President Central Pacific Railroad.
Hon. Robert Watt, Controller of California.
Ex-Governor M. S. Latham, banker.
G. B. Cerrutti, Consul of Italy.
H. Barroilhet, Peruvian Consul.
F. Roeding, of R. Feuerstein & Co.
Hon. E. W. McKinstry, Judge Twelfth District.
John A. McGlynn, Superintendent Central Railroad.
Joseph G. Eastland, Secretary San Francisco Gas Company.
A. R. Baldwin, real estate.
J. W. Stow, merchant.
L. L. Robinson, capitalist.
W. W. Hollister, wool grower, Santa Barbara.

BOARD OF TRUSTEES.

James Linforth, of Linforth, Kellogg & Co.
L. Gottig, President German Savings Bank.
Mark Hopkins, Treasurer Central Pacific Railroad.
E. Kruse, of Kruse & Euler.
H. M. Newhall, of H. M. Newhall & Co.
Charles S. Capp.

C. T. Hopkins, President California Insurance Company.
Thomas Breeze, of Murphy, Grant & Co.
H. B. Tichenor, of H. B. Tichenor & Co.
J. W. Stow, President Metropolitan Gas Company.
Henry Balzer, of Zeil, Bertheau & Co.
A. Seligman, banker.
John S. Ellis, of Ellis & Curtis.
W. W. Montague, of Locke & Montague.
S. O. Putnam, Secretary California Steam Navigation Company.
Joseph Aron, of Weil & Co.
C. T. Hopkins, President.
J. Seligman & Co., Treasurer.
Charles S. Capp, First Vice President and Manager.
W. H. Martin, Secretary and General Agent, office 316 California street.
George Greierson, Copenhagen, Agent for Denmark, Sweden and Norway.
E. Kruse, of Messrs. E. Kruse & Co., Correspondent at Bremen.
Messrs. Balzer & Co., Corresponents at Hamburg.

CALIFORNIA IMMIGRANT UNION.

STATEMENT OF ITS OBJECTS, PURPOSE, AND PLAN OF OPERATIONS.

[Published in the *Evening Bulletin*, of May 13th, 1870.]

To the People of California:—The Legislature of California, at its last session, decided that it would make no appropriation of public moneys to aid or hasten immigration to this State. It is not necessary to discuss the various causes which led to that result. It is sufficient that we accept the fact, and with it the consequences. These may be summed up in the simple statement that in default of official action to bring desirable American and European immigration hither, California has now to rely upon the attraction of her natural resources and the voluntary efforts of the public spirited portion of her citizens to make those resources known to the immigrating classes.

The California Immigrant Union is composed principally of leading business men of San Francisco. Their interests are identified with those of the State at large. Their names are a sufficient guarantee as to the manner in which the business of the Immigrant Union will be transacted, and that the promises its officers may make will be honorably performed. This Association now commences the performance of a portion of this task. It has no capital stock. The subscriptions of its members and friends are its only present means for the payment of its expenses. The measure of its success and usefulness will largely depend upon the voluntary and active coöperation of men of practical ideas and public spirit in the other counties of this State. We confidently expect this coöperation and active aid from the local presses and citizens of standing and intelligence in the interior.

What is it that we require? Simply this: We say to the people of the counties that desire their agricultural populations increased, their vacant public lands passed into the ownership of small holders, settled, improved, and cultivated—that we can attract desirable American and European immigrants to California during the present and the coming year in large numbers. The means we propose to use are the same that have been successfully applied in all the new States that have grown so rapidly during the past ten years, while California, without them, has in point of population been almost stationary. That is a part of the business that presents comparatively few difficulties, now that the funds necessary for performing it, upon at least a moderate scale, have been secured. A considerable number of immigrants will, perhaps, come without regard to our efforts.

QUESTIONS FOR THE COUNTIES.

But when they come here where shall they go? What can your county offer to induce them to settle, enrich, and improve it in preference to any other locality? What good public lands, adapted to agriculture, are there within the limits of your county, surveyed or unsurveyed, on which they can settle upon the terms offered by the General Government? In default of public lands, what private lands are there in your county, improved or unimproved, which are really desirable and offered for sale at rates so low and upon terms so liberal as really to constitute an inducement to immigration? Suppose that within the next three months, or in six months, or a year, we can bring hither a colony of ten, twenty, fifty, or one hundred heads of families of agriculturists, Americans or Europeans; has your county a location upon public lands on which we can settle them cheaply and advantageously to themselves? If so, where is it, and what assurance can we have and publish of that fact? If there are no such locations to be had upon public lands, are there any upon private lands, entirely suitable, to be had at really cheap rates and upon such terms of payment as to constitute a substantial inducement for them to come there? Who of you that are known and responsible will vouch for the statements made concerning either of such locations, and are prepared to pledge themselves to aid any such movement by their advice and coöperation if attempted? We have enough of general information; we now want the facts relative to the separate districts and counties.

If the showing you are able to make for your county is such as to answer satisfactorily these and similar questions that are almost daily addressed to us by strangers newly arrived and in search of such lands for settlement and by the letters from abroad, there will be no difficulty in procuring and sending immigrants thither to locate their homesteads upon public lands, or purchase private lands and settle and improve them. We know that a satisfactory showing of this kind could be made concerning nearly every county in California. The question is, however, as to every county.

WHO IS TO DO IT?

Have you in your midst one or more intelligent, reliable men, public spirited enough to be willing to take the time and bestow the labor necessary to make this exhibit of the inducements your county presents to immigrants in order to attract them there? And when they come,

who are the men to aid them in finding the lands mentioned, that they need not be disappointed, and feeling deceived and injured, seek other localities? Doubtless such men can be found among you. We desire them to signify their willingness to do this at once. Very little more than this is necessary to enable us to accomplish the objects we have in view.

OUR OBJECTS AND PLANS.

We desire first to bring new agricultural settlers here, and when they are here to be able to send them without delay and as cheaply as possible to districts in which they can settle contentedly with advantage to themselves and to the older residents, and thus build up the State. We desire to make this essentially a movement for the benefit of the whole public of California and of the immigrants. If without unnecessary delay, there is sufficient public spirit developed in the counties to aid us actively in the ways we have suggested, it will be entirely such a movement. If this public spirit is lacking, private enterprise will reap the largest part of the immediate benefit. If this association, organized and pledged to help immigrants, is not able to send them to those who will point out public lands upon which they can locate under the liberal homestead and preëmption laws of the nation, either singly or in numbers together, private land operators will press their lands upon their attention at higher prices, and it will be far cheaper for them to accept those offers than to travel wearily and at great expense in search of lands for themselves, which it is sometimes difficult to find, and always discouraging to seek for, while the false report is so industriously spread abroad that "all the good and valuable public lands are already monopolized."

Among those who come here to settle, there will be many possessing means sufficient and desiring to purchase improved farms, or lands nearer to the cities and towns and main routes of travel, and railroads already or soon to be built, at prices in proportion to their advantages. We accordingly solicit consignments of such lands for sale at fair prices, and are prepared to advertise them abroad extensively by means of our foreign and Eastern publications and agencies, and to dispose of them on commission to those who desire to purchase. In this way we expect to increase the available funds of the Union, and enable us to extend the gratuitous portions of our operations accordingly.

We propose to publish the advantages and inducements offered to immigrants by the entire State. We prefer not to limit our operations to any particular section or county. We are willing and desirous of leaving the settlement of your own county to yourselves. We offer you the benefits of our labor, our central organization, and the agencies we will establish abroad. We desire, above all things, that in every county of the State of California one or more branches of the "California Immigrant Union" or Advisory Committees, or, if you prefer it, entirely independent organizations shall be formed, or when this cannot be done, that at least some one suitable permanent resident shall agree to correspond with us, and to attend to the reception and location of immigrants within its limits. Usually they will be abundantly able to take care of themselves if once the lands upon which they can settle are pointed out, or a bargain in private lands that suits them is offered. We know that in the majority of instances this can be done far more easily and satisfactorily for the immigrants by those who are upon the spot than by us at a distance. We can usually only do this by the employment

of traveling agents, or by other means involving considerable expense, much of which it is not proper or necessary that either we or they should be called on to meet. All such unnecessary expense detracts just so much from the inducements to settlers to go there or to us to send them.

This is the sort of information California needs to have disseminated abroad. It is what we require to lay before immigrants here. Collect it and forward it to us for publication, or publish it in your local papers and send us copies thereof. Organize to act in this way; see that your County Assessors, whose duty it is under the law to collect such statistics, perform their duty, and let your Supervisors and your local committee see that their figures are complete and accurate, in order that our State and official reports may be trustworthy and creditable. Let us know which are the counties that most desire an increase of their population and that offer the greatest inducements to it. If you distrust our management, manage the location of immigrants who come among you yourselves. We seek no monopoly of this business. We welcome every aid, and are prepared to applaud and encourage every effort, public or private, that tends in the same direction, no matter what the motive that inspires it. We will disseminate reliable information in our own country and abroad. We will send out agents to turn the tide of immigration to our shores. If every county is prepared to strive to obtain the portion of which it stands in need, and which its advantages, if known, ought to attract, all their vacant lands that are valuable may, in a very few years, be filled up and settled by a prosperous, happy, industrious, productive population. With the extension and diversification of our agriculture will arise a corresponding development of mining, manufactures, and commerce, and abundant employment for those who prefer to engage in other occupations than mining and stock raising. It is evident that whatever is done in the manner we suggest in the counties, must tend to their advantage. Whatever is done in the publication of the information collected, must operate directly and indirectly for their benefit and that of the State at large. There is nothing to be lost by the plan proposed. It costs little. Something of the sort is needed. This is our plan, and no other is offered. We are prepared to develop and enlarge it in every useful direction as circumstances require, and as the aid we receive and the funds at our disposal will permit.

Short forms of association for those who may wish to organize local branches of the "California Immigrant Union" or auxiliary societies or committees in their own counties, will be sent gratuitously when desired, and copies of our by-laws to those who wish to join this Association. Copies of our publications will also be forwarded wherever likely to be useful, without charge. All communications should be addressed to the "California Immigrant Union," San Francisco. Office, number three hundred and sixteen California street.

Officers of the California Immigrant Union:—President, C. T. Hopkins; First Vice President and Manager, C. S. Capp; Second Vice President, Charles Crocker, Vice President Central Pacific Railroad; Third Vice President, L. Gottig, President German Savings Bank; Secretary, C. W. Grant; Treasurer, J. Seligman & Company, bankers; General Agent, W. H. Martin.

Trustees:—L. Gottig; P. H. Canavan, importer of wines and liquors; H. J. Booth, manufacturer; Alexander Weil, of Lazard Freres; Charles Crocker; Charles Kohler, of Kohler & Frohling; F. Berton, banker, Consul of Switzerland; G. O'Hara Taaffe, Danish Consul; C. S. Capp; A.

Seligman; Thomas Breeze, of Murphy, Grant & Co.; Charles Clayton, merchant; C. T. Hopkins, President California Insurance Company; Aug. Helbing, of Strauss & Helbing; A. D. Bell; S. O. Putnam, Secretary Steam Navigation Company.

Honorary Committee:—His Excellency Henry H. Haight, Governor of California, President ex officio; Hon. T. H. Selby, Hon. John G. Downey, D. J. Oliver, Morris Speyer, Christian Christiansen, Joseph A. Donohoe, Gustave Mahe, Hon. Leland Stanford, Hon. Robert Watt, Hon. Milton S. Latham, G. B. Cernti, Italian Consul; H. Barroilhet, Peruvian Consul; F. Roeding, Hon. E. W. McKinstry, W. W. Hollister, John A. McGlynn, Joseph G. Eastland, A. R. Baldwin, J. W. Stow, L. L. Robinson.

[Circular requesting coöperation by residents of the interior of the State.]

OFFICE OF THE CALIFORNIA IMMIGRANT UNION,
316 California street, San Francisco, June 6th, 1870.

DEAR SIR: Inclosed please find a circular address from the California Immigrant Union. It fairly and fully states the object of the movement we have set on foot. Can you do anything in your county toward the formation of a branch of this Association, an Advisory Committee, or an independent organization, to encourage the settlement of an agricultural population in your county by facilitating the movements of any who may come to you desiring to locate in your midst? Farmers coming here from the Eastern States and Europe, and able to purchase farms for themselves, or to commence farming upon public lands, are as intelligent as ourselves, and will usually be able to know what will suit them and what will not. If they can here obtain full information concerning any portion of the State, and can be recommended to some responsible person or persons in each district who will advise them truly as to price, quality, and title of private lands, and where they may safely locate upon Government land, usually they will require no further assistance. If they are assured of a kind reception among people who would be glad to have them as neighbors, and enabled to find good locations, without wasting time and money in hunting them from one end of the State to the other, they will be encouraged to visit your county and may easily be induced to become permanent and useful residents. Are you and any of your friends ready to aid the Association in the plan proposed? If so, advise us of what you are able and willing to do for your county, and furnish us with the names of responsible persons, residents of your county, to whom intending settlers may be sent for information and advice, and such information as you may be able to afford concerning its lands and the inducements it offers them.

Please call this matter to the attention of public-spirited citizens of your county, and advise us of the feeling concerning it, and oblige,

Yours truly,

CHAS. S. CAPP,
Manager California Immigrant Union,
316 California street.

[A similar circular was also addressed to County Surveyors and others.]

BLANK FOR LOCAL INFORMATION.

Information concerning lands suitable for Settlers in —— County, California. Furnished to the California Immigrant Union, by ——.

Acres	Location	Quality.....	Improvements	Title	Owner and Agent's Address..	Price and Terms.....	General Information and Remarks

Dated ———, 187—.
Signature: ——— ———.
Post Office address: ——— ———.

Special Notice to Agents.—The California Immigrant Union does not desire to deal with or advise immigrants or others to settle upon, purchase, or examine lands, the title to which is uncertain, involved in litigation, clouded or unsettled, or held in undivided interests, all of which are not obtainable. Information concerning lands thus situated would be useless, and is therefore not desired. Its officers particularly desire to be placed in communication with owners of large tracts of good land, who are willing to cut them up and sell them in small parcels at fair rates and upon easy terms to actual settlers. Whenever diagrams or maps can be procured and forwarded without expense, they will add to the value of the information furnished.

CHARLES S. CAPP,
Manager California Immigrant Union.

[Blank answer to ordinary letters.]

California Immigrant Union,
Office, 316 California Street,
San Francisco, ——, 187–.

Mr. ————:

Dear Sir: Your letter of ——, asking information concerning California, was duly received ——. Herewith we have mailed to your address a package of our documents, viz: ——. These contain most of the information you desire, and probably all that can be of service to one at your distance from our State. When read, please loan or mail them to such agricultural friends of yours as will be likely to be interested in their contents, or else place the extra copies in some public reading room or library in your vicinity not already supplied, where they will be preserved and may be read by all who desire to do so. We should also be pleased to receive the addresses of any other persons, libraries, or reading rooms to whom, in your judgment, it might be useful to send similar documents. Any of your friends who desire copies we will supply with pleasure, on application to us.

Yours, truly,
————————————,
—— California Immigrant Union.

[A blank page for further answer, and list of officers on the back of the sheet.]

STATEMENT

Of the Receipts of the California Immigrant Union from November 1st, 1869, to December 31st, 1871.

MONTHS.	Donations.....	Subscriptions.....	Loans.....	Advertising.....	Rent desk room...	Totals.....
1869.						
November.....		$1,800 00				$1,800 00
December.....		775 00				775 00
1870.						
January.....		700 00				700 00
February.....		250 00				250 00
March.....		100 00				100 00
April.....			$100 00			100 00
May.....	$129 50	1,012 00	300 00			1,441 50
June.....		1,224 00			$87 50	1,311 50
July.....		1,004 00		$245 00	75 00	1,324 00
August.....	22 95	864 00		398 00		1,284 95
September.....	6 00	1,607 00	1,453 12		45 00	2,511 12
Totals first 11 mos.	$158 45	$8,276 00	$1,853 12	$643 00	$207 50	$11,598 07
October.....	$ 75	$817 00			$20 00	$837 75
November.....	25	823 00			20 00	843 25
December.....	1 10	1,026 50			20 00	1,047 60
1871.						
January.....	21 50	846 50			79 00	947 00
February.....	1 00	742 00			78 00	821 00
March.....	68 50	793 50		$100 00	70 00	1,032 00
April.....	20 00	1,044 50			71 25	1,135 75
May.....	100 00	515 00			25 00	640 00
June.....	351 25	442 50		5 00	80 00	878 75
July.....	G 170 00	707 50			25 00	902 50
August.....	50	542 50			90 00	633 00
September.....	10 00	487 50			25 00	522 50
Totals second year.	$744 85	$8,788 00		$105 00	$603 25	$10,241 10
October.....		$692 50			$25 00	$717 50
November.....		492 50		$64 00	90 00	646 50
December.....		582 50		135 90	10 00	728 40
Totals last 3 mos...		$1,767 50		$199 90	$125 00	$2,092 40
Totals.....	$903 30	$19,291 50	A $1,853 12	B $947 90	C $935 75	$23,931 57

NOTES.—A. Advances by Messrs. J. Seligman & Co.

B. Advertising in pamphlets.

C. This amount, $947 90, is to be deducted from Cr. $2,698 50 expended for rent, reducing it to this extent, viz: to $1,750 for twenty-six months.

G. Commissions and expenses on land sold in Monterey County.

STATE

Of the Expenditures of the California Immigrant Union

MONTHS.	Printing and matter for distribution	Postage	Stationery	Salaries Manager, General Agent, Secretary, and Boy	Collection	Office expenses
1869.						
November	$105 50	$34 45	$58 58	$252 00		$9 85
December	833 75	35 85	18 25	210 00		5 40
1870.						
January	307 25	5 65	3 90	640 00	$100 00	5 50
February	17 50	9 95	7 25	330 00		5 50
March				95 60		
April	2 50			30 00		15 00
May		55 45	21 20	610 40		51 65
June	110 87	39 35	14 00	895 00	57 04	24 00
July	305 00	41 42		438 20	35 75	53 30
August	697 60	43 95		412 50	76 92	34 00
September	188 00	72 20		831 25		68 60
Totals first 11 months	$2,567 97	$338 27	$123 18	$4,744 35	$269 71	$272 80
October	$129 00	$14 15		$492 25	$16 42	$25 75
November	265 10	39 30	20 62	350 00	17 17	20 25
December	50 00	125 60	9 15	555 00	30 50	17 68
1871.						
January	26 50	41 40		433 00	14 90	27 45
February	10 00	44 00	17 00	385 00	12 30	32 00
March	13 85	71 00		418 50	13 70	25 25
April	15 00	29 10	18 25	944 50		23 10
May		13 60	1 87	264 00	10 00	1 35
June	5 50	20 10		381 00		10 25
July		47 75		299 50		11 25
August	50 00	16 55		462 75		16 94
September	61 25	21 80		282 50		10 85
Totals second year	$626 20	$484 35	$66 89	$5,268 00	$114 99	$222 12
October	$7 00	$18 10	$18 38	$383 00		$12 00
November	18 00	12 35		459 00		12 85
December	205 50	50 75		384 00	$87 00	34 25
Totals last three months	$230 50	$81 20	$18 38	$1,226 00	$87 00	$59 10
Totals	$3,427 67	$903 82	$208 45	E $11,238 35	$471 70	$554 02
Cash on hand to balance						

NOTES.—Payments in this column are irregular in amount, because employés were not paid regularly or in full. Salaries Manager, $150; General Agent, $250 (out of which he paid subscription of $50 per month); Office Boy, $35; Secretary to June 30th, 1869, $150. Also traveling expenses allowed General Agent, $375.

MENT

from November 1st, 1869, to December 31st, 1871.

Rent.....	Furniture	Advertising	Newspapers.....	Loans repaid.....	Sundries.....	German agency...	Totals.....
$60 00	$168 82	$14 50	$7 50		$88 75		$785 45
50 00	27 50		7 75				1,203 00
50 00		7 50	3 50				1,115 80
.....			2 00		20 00		399 70
.....							95 00
.....							47 50
186 00	156 00	35 00	42 50	101 00			1,259 20
62 50	60 40	30 00	16 25		9 00		1,318 41
125 00				308 50			1,307 17
125 00	14 02						1,403 99
125 00				175 00		D 1,153 12	2,613 17
$783 50	$426 74	$87 00	$79 50	$584 50	$117 75	$1,153 12	$11,548 39
$125 00			$6 00				$808 57
125 00			4 50		$40 00		842 34
125 00			2 50	128 28			1,043 71
125 00		90 00	13 25	175 00			946 50
125 00		30 00	2 00	100 00			757 30
125 00				300 00			967 30
125 00			9 15				1,194 10
250 00	5 00		5 00	100 00			650 82
125 00			9 25		F 350 00		901 10
125 00		5 00	7 00	211 53	G 170 00		877 03
125 00			12 75	2 25			686 24
125 00		20 00	4 50	3 55			529 45
$1,625 00	$5 00	$175 00	$75 90	$1,020 61	$520 40		$10,204 46
$125 00			$4 00	$153 55			$721 03
125 00			9 75	2 15			639 10
40 00			10 75	2 05			814 30
$290 00			$24 50	$157 75			$2,174 43
Cr$2,698 50	$431 74	$262 00	$179 90	$1,762 86	$638 15	D $1,153 12	$23,927 28
.....							4 29
							$23,931 57

D. Paid salary of S. Boeh from departure until employment ceased. Cost and freight on German pamphlets not included in this amount. Salary and traveling expenses $250 per month.

F. This covers expenses of General Agent to New York.

G. Commissions and expenses on land sold in Monterey County.

STATEMENT

Of documents received by California Immigrant Union from October, 1869, to December 31st, 1871.

Pamphlet Form.	
English pamphlet, first edition	10,000
English pamphlet, second edition	10,000
English pamphlet, third edition	5,000
German pamphlet	5,000
Common Sense Applied to Immigration	10,000
Arguments in favor of Immigration	1,000
Surveyor General's Report, 1869, 1870, and 1871	2,957
Agricultural Lands of California. (Fabian's Essay)	700
Report of State Board of Agriculture	350
Ed. Young's Special Report on Immigration	30
San Diego and Southern California	250
Railroad Gazetters, with time tables, maps, and fares to California	150
Valedictory of Hon. Thomas Selby, and Inaugural address of Hon. William Alvord	50
Controller's Report	20
Newspaper Form.	
Resources of California, first number	7,000
Resources of California, second number	3,350
Alta California, containing Hittel's Essay	8,000
Scientific Press	625
Green's Land Paper	1,000
Sacramento Union. (United States Surveyor General's Rep't).	200
Stockton Independent on "San Joaquin."	100
Kern County Courier on "Resources of Kern County."	550
Evening Bulletin	300
Evening Bulletin, containing Annual Report	100
Evening Bulletin, containing "How to Promote Immigration."	100
Circulars.	
Los Angeles and Southern California	250
San Bernardino. (River Side Colony)	50
Steamer Route to California	600
Circular, English	10,000
Circular, German	10,000
Circular in regard to Fresno County	200
Public Land Laws of California	100
Pearson's pamphlet on California	200
European Immigration	25
Immigration and Commissioner of Immigration of New York State	25

STATEMENT

Of Documents Mailed and Distributed by the California Immigrant Union from October, 1869, to December 31st, 1871.

MONTHS.	English Pamphlets.		German Pamphlets.		"Resources of California."		Extra "Alta."		Surveyor General's Report.		"Scientific Press".....	"Sacramento Union"...	Sundries.	
	U. S.	Abroad.	U. S.	Abroad.	U. S.	Abroad.	U. S.	Abroad.	U. S.	Abroad.			U. S.	Abroad.
Previous eleven months.....	4,362	1,819	877	2,084			6,000	2,000	200	46				
1870. October.....	806	44	187	19	762	51	178	6						
1870. November.....	351	129	197	12	595	79	81	47	20	2			25	20
1870. December.....	175	29	74	2	427	34	190	28	21	5			63	11
1871. January	328	39	51	19	227	22	108	14	208	28	46	39	91	3
1871. February	1,149	327	65	149	496	107	56	12	133	55	104	38	107	20
1871. March	1,152	1,274	125	120	564	293	96	48	84	61	134	54	146	53
1871. April.....	510	61	7	25	363	76	40	13	168	23	50	9	60	3
1871. May	329	1,659	7	12	178	655	25	63	43	62	176	9	61	260
1871. June.....	219	64	40	5	294	85	8		29	18	35	4	57	46
1871. July	56	113			625	549	5	33	21	36	31	2	44	24
1871. August.....	162	25	8		277	60	24	6	63	11			74	23
1871. September.....	66	13			848	34			57	8			61	17
1871. October.....	105	24			225	64			47	28			102	41
1871. November.....	506	12			89	18			17	4			27	6
1871. December.....	868	131			361	90			130	45			134	24
Totals	11,144	5,763	1,638	2,447	6,331	2,217	6,811	2,270	1,241	432	576	155	1,052	551

SUMMARY.					
Totals for United States.....	11,144	1,638	6,331	6,811	1,241
Totals for abroad.....	5,763	2,447	2,217	2,270	432
Total Libraries.....	701	117			
Totals.....	17,608	5,087	8,548	9,081	1,673

576	155	1,052 551	
.....			
576	155	1,603	

STATEMENT

Of Letters received and written by the California Immigrant Union from October, 1869, to December 31, 1871.

RECEIVED.				WRITTEN.			
Months.	United States.	Abroad.	Total.	Months.	United States.	Abroad.	Total.
1869.				1869.			
October	24	8	32	October	1	3	4
November	32	4	36	November	37	4	41
December	29	7	36	December	8	2	10
1870.				1870.			
January	13	4	17	January	3	1	4
February	9	2	11	February	1	1	2
March	17	2	19	March	1		1
April	21		21	April	1		1
May	34	2	36	May	39	4	43
June	48	5	53	June	56	4	60
July	41	2	43	July	38	2	40
August	61	6	67	August	79	8	87
September	68	9	77	September	71	7	78
October	57	4	61	October	65	2	67
November	52	18	70	November	59	16	75
December	77	13	90	December	104	12	116

1871.			
January	60	7	67
February	82	7	89
March	63	6	69
April	41	2	43
May	28	4	32
June	34	9	43
July	31	6	37
August	54	7	61
September	50	9	59
October	60	6	66
November	35	10	45
December	41	3	44
Total	1,162	162	1,324

1871.			
January	69	6	75
February	75	8	83
March	80	10	90
April	46	2	48
May	47	2	49
June	50	10	60
July	63	25	88
August	59	9	68
September	62	7	69
October	47	4	51
November	57	7	64
December	69	5	74
Total	1,286	162	1,448

STATEMENT

Of Letters received by the California Immigrant Union, from October, 1869, to December, 1871.

STATES AND COUNTRIES.	1869.			1870.												1871.												Totals
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	
California	6	19	6	3	3	9	14	21	30	27	19	23	20	17	36	26	33	22	21	13	13	10	17	22	44	22	13	511
San Francisco	10	9	5	1	1	2	2	7	5	3		3	5		1		5	2	1	4	1	1	3	1	2	1	1	76
Illinois	1		6	2	3			1	2	5	16	11	2	4	4	7	10	6	1	1			2	4	2		4	94
New York	1	1	1	1	1	1			3	1	1	4	4	3	5	1	3	4	1	1	1	5	6	4	3	5	5	66
Missouri			2	1				1		2		5	2		3	2	5	3	1	2	4	2	2	3				40
Massachusetts								...		1	2		2	1	2		1	1	1	1	1	3	4		1			24
Ohio							. ..		1		4	2	1	3			1	1		1		1	2			1	4	22
Wisconsin		1	3	1					2		1	1		2	1	1	2	2		1	1			1			2	23
Kentueky		...					. .	2			2	1	2	1	2				2			1	6	1		1		21
Tennessee	1		2						1		3	2					1	...			1		1	4			1	19
Michigan	1	1	1			1					2		3	1	1		2	1	1		2				1			18
Pennsylvania				..									3		4		2	1			1		3	1	1		1	17
Mississippi	1										1	3		6		...		1	1		1		1	1				13
Indiana				1							1	1	1		1	3	2	3	1		1				1			16
Nebraska		...	1		1	1	1				1	1		2		2		2		1					1		1	15
Oregon		1				3	2	2	1					1	1		1	2									...	14
Minnesota				1									1		1	1	2	2	1				...	2		1	2	14
District of Columbia										...		1			3	5	...				1		1			2	2	15
Kansas												1	3			3			2	1		2		1			1	14
Iowa													1	2	3	2		...	2		1	1				...		13
Nevada							...		1	1	2	1			1		1		1	1	1		1					11
Alabama												1	1	3			1		1	...				1	1	...		9
Maryland								...			2	1			1		2			...			2					8
Rhode Island											1	3			1	1		1									...	7
Arkansas																1	...				1		1	1	1		2	7
Utah							1			1			1	2	1							1						7
Washington Territory	1														2	1					1					1		6

Virginia	1						1											3										6
Texas																												6
New Hampshire																	1	1			2		1		1			6
Georgia			1	2							2				1		1	3	1									6
Connecticut															1													5
South Carolina												1	1		1	1	1						1		1			5
New Jersey																	1					1		1				4
West Virginia												1					1	1					1					3
Colorado																					1	1			1			3
Maine																1	2											3
Montana											1		1			1												3
Delaware												1			1													2
North Carolina	1												1															2
Wyoming Territory																												1
Arizona																												1
Louisiana																												1
Florida																												1
Dakota Territory			1																									1
Idaho																												1
Totals for United States	24	32	29	13	9	17	21	34	48	41	61	68	57	52	77	60	82	63	41	28	34	31	54	50	60	35	41	1,162
England													1	7	2		4	3	2	2	5	3	4	3	3			39
Ireland														1	1	1									1			4
Scotland															1	1	1											5
Europe	8	3	6	4	2	2		2	1	2	6	6										1		1				42
Germany														2	3	2		1		1					3			13
Denmark														1														1
Sweden																												2
Saxony																								1				1
Franco													1															1
Nova Scotia																												1
New South Wales																												1
New Zealand													3								1	2		3		2		11
Australia														5		2									4			11
Central America		1	1						3			1			1											4		6
British North America																												1
Canada									1			2	2	4		3		2			2	1		3		1	1	22
China																						1						1
Totals abroad	8	4	7	4	2	2		2	5	2	6	9	4	18	13	7	7	6	2	4	9	6	7	9	6	10	3	162
Totals for U. S. and abroad	32	36	36	17	11	19	21	36	53	43	67	77	61	70	90	67	89	69	43	32	43	37	61	59	66	45	44	1,321

STATEMENT

Of Letters Written by the California Immigrant Union, from October, 1869, to December 31st, 1871.

STATES AND COUNTRIES.	1869.			1870.												1871.												Totals	
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December		
California		15	3	1	1			15	37	26	23	33	28	33	56	32	35	34	27	14	19	32	22	31	34	33	37	624	
San Francisco	1	10	2	1		1	1	12	6	3	2	7	10		10	3	4	5	2	16	3	10	4	2	1	9	3	127	
New York		5						6	3	2	9	5	7	2	5	1	4	5	2	2	2	9	5	3	5	5	5	91	
Illinois		1	2	1				1	5	3	14	9	2	2	2	7	4	5	1	3			5	4	3	2		4	83
Missouri		1									1	3				4	5	6	1	1	4	1	3	6	6		1		36
District of Columbia		1							1	1	3	1			6	3		1	1	1		1	2	4		1	4	4	30
Massachusetts											2	1		2	1	1	1	1	1	1	4	3	2	4					22
Ohio											3	1	1	3			1	1		3			2	2			1	4	22
Iowa									2	2	3	1	2	1	4	2			1		2								20
Kansas											1		1	2		3	2	3		2				1				2	19
Pennsylvania										1		1	2		4		2	1	3	2	2	1		1				1	17
Tennessee											3	1	1				2	3			1	2		2	4			1	15
Indiana											1	1	1	3	1	3	1	2	1	1		2		1		1			15
Michigan											1		2	1	1		2	1	1			4				1			14
Kentucky								2			2		2	1	1					1			1	2	1		1		14
Nebraska									1		1	1		3	1	2		2		1	1							1	13
Wisconsin		1												1	1	2	2	3						3		1		2	11
Maryland		2						2			2		1			1	1	3		1					1			2	9
Minnesota																1	1	3	1		1	2			1		1		7
Texas																1	1	3	1						1				6
New Hampshire																		1	1										7
Mississippi		1										1	1						1		1				1				6
Nevada									1					1	1				1		1			1		1	1	1	6
Arkansas																1					1			1					5
Virginia																	2	3								1			5
Connecticut													1		1			1									1		

Oregon								1					1					2						1				5
New Jersey																				1		1		1			1	4
Utah														2	1											1		4
Maine																1	2	1										4
Washington Territory															1	1	1				1							4
Rhode Island											2				1			1										4
South Carolina										1	1	1				1												4
Alabama											1	1											1		1			4
Georgia										2				1														3
Montana Territory											1		1						1									3
Colorado																				1	1							2
North Carolina														1	1													2
Wyoming Territory																				1								1
Louisiana																						1						1
Arizona																						1						1
Florida																							1					1
West Virginia											1																	1
Totals in the United States	1	37	7	3	1	1	1	39	56	38	79	71	65	59	104	69	75	89	46	47	50	63	59	62	47	57	69	1,286
England	1									1	4	1		10			6	3	1	2	6	7	2	1		1		46
Ireland														1		1		1										3
Scotland															1	1	1					4	1	1			1	10
Germany	1	3	2	1	1			4		1	3	2	1	1	1	1					1	3				3		29
Denmark	1											1			1													3
Sweden																										2		2
Saxony																								1				1
Prussia		1																										1
British North America																1												1
South Africa																									1			1
New Zealand			1								1	1		1			1	2				1	6		1		1	16
New South Wales									3			1						1				6		1			1	13
Australia									1						5													6
China														1								2						3
India																								1				1
Canada												1	1	2	3	2		2	1		3	2		2	2	1	2	24
B. Island															2													2
Totals abroad	3	4	3	1	1			4	4	2	8	7	2	16	12	6	8	10	2	2	10	25	9	7	4	7	5	162
Totals for U. S. and abroad	4	41	10	4	2	1	1	43	60	40	87	78	67	75	116	75	83	90	48	49	60	88	68	69	51	64	74	1,448

STATEMENT

Of applicants at the Office of the California Immigrant Union in reference to Public and Private Lands, from December, 1869, to December, 1871.

STATES AND COUNTRIES.	December, 1869.	1870.												1871.											Totals.	
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Iowa	28	7			47	22	59	19	11	33		4	14	15	17	25	24	46	24		1	5	14	12		397
Missouri		12			32	15	19	3	7	14		2	8	9	11	16	29	58	13	1	1	11	25		2	291
New York	3	4		2		20	10		6	9	16	6	19	10	12	10	11	21		3		15	41	3	11	235
Ohio	2	1		2	22	10	38	19	7		1	5	32	20	8		8			1	1	21	24	5		218
Illinois	22	18	4		1		4	2	2	4	1	9	6	4	11	7	23		3	6	11	15	20	6	1	183
California												15			2		1		1	4		29	110	2	9	173
Tennessee			1		7	3	1	2		8		4	5	9	3	11	18	17	19	4		11	22	8		153
Indiana	3				4	15	2	3	6	1			6	12	4	21	10	11	4	5		22	7	7		146
Kentucky									7		1	3		6	17	17	22	12	14			11	18	5	3	133
Minnesota	2		7		3	11	4	3	2	14	7			13	6			2	11	2		16	7	4	6	123
Pennsylvania	3				13	4	4			3		14	1	6	7	9	4					4	19	16		107
Wisconsin	2	2			8	1	5	3		3	14	4	17		3									2	10	64
Maine	6	3				1				4	1		2		7		1	5							1	31
Virginia															4	4							22			30
Massachusetts							3			1			2		3	5	3		3			7				27
Georgia														2		2		8	9					4		25
Kansas					1			2	3	2		3	2				11								4	28
Rhode Island													1		6							6	5			18
Maryland															4			2					11			17
Alabama					8	1							3	4												16
Michigan		2								4	7						2									15
Vermont																		13							1	14
Nevada															7	2							2			11
Connecticut																						4	6			10
Arkansas									3					7												10
Utah																7						1				8
Arizona																1	2						5			8

New Hampshire						1																6			7	
South Carolina					6																				6	
District of Columbia																	3			1		1			5	
Oregon													3									1			4	
Nebraska						1						2			2										5	
Mississippi																	4								4	
Texas														4											4	
New Jersey							3																		3	
Idaho																				3					3	
Colorado											1														1	
Totals in the United States	71	49	18	4	152	105	152	47	54	100	48	70	120	120	136	142	172	172	104	26	15	181	366	74	48	2,546
England		3	3	8	3	7	24	3	4	1		2	9	11	9	4	4	7	2	1		18	20	9	18	170
Ireland							6		6				11	6	12	27	1					19	13	7		108
Scotland							2			3			1	1						1			8			16
Wales																						1				1
Germany		7			3	18	31	18	38	22		10	6	6	6		3	2	14	1		55		30	9	279
Denmark	3		1			8	2	1		1							7						33			56
Holland																						1		1		2
Sweden						1			4	6		2	7								2	1	2			25
Italy																9							2			11
Switzerland																			4							4
France						1				3			6		2	1	1		2			1				17
Canada		3		9	22	16	15	2		1	1		14		4	5	5	5		2		1	1	8	1	115
South America																			2							2
New Brunswick																						1				1
Australia		2			5		9	7		1			2	2		1		2	10		8			1	1	51
New Zealand								2								1	4			4	3	4				18
Totals abroad	3	15	4	17	33	51	89	33	52	38	1	14	56	26	33	48	25	16	34	9	13	102	79	56	29	876
SUMMARY.																										
United States	71	49	18	4	152	105	152	47	54	100	48	70	120	120	136	142	172	172	104	26	15	181	366	74	48	2,546
Abroad	3	15	4	17	33	51	89	33	52	38	1	14	56	26	33	48	25	16	34	9	13	102	79	56	29	876
Totals	74	64	22	21	185	156	241	80	106	138	49	84	176	146	169	190	197	188	138	35	28	283	445	130	77	3,422

PROTEST AND MEMORIAL

AGAINST

GRANTING APPROPRIATION

TO THE

IMMIGRANT AID SOCIETY.

T. A. SPRINGER.....STATE PRINTER.

PROTEST AND MEMORIAL.

To the Honorable the Legislature of California:

The undersigned, a citizen of this Commonwealth, in behalf of himself and the public interest, desires to submit a protest against your honorable body making any appropriation out of the public treasury towards defraying the expenses of any "Immigration Aid Society."

Almost the entire area of arable public land in California, as well as the major portion of the Mexican and Spanish granted ranches, having passed into the proprietorship of a few speculators, at insignificant prices—chiefly through the tortuous and unfair agencies of corrupt legislation and adjudication—it is the hight of presumption for these *legal spoliators*, or robbers within the pale of the law, of this vast estate and other wealth of the country, to come before the people's representatives seeking such subsidy to increase population, only to enhance the value of their possessions. We have already more inhabitants in our State than are desirable, under existing circumstances. Let them remain away until that great reactionary and reformatory period (not distant) shall have arrived, when all these fraudulently seized upon public acres (the common property of the whole, and only to be enfeoffed in limited quantities to actual occupants) shall be restored to their original status to be thus parceled out and possessed. And this protestant and memorialist prays your honorable body will take some action to hasten such consummation, so imperatively demanded by justice and the vital interests of the State.

Such aids to invite and fetch in the refuse and surplus populace from other countries is wrong in principle. I can appreciate the policy of the Governments of these latter countries in rendering assistance to rid themselves of such redundant population, especially of the least desirable, or of the self-prompted and aided deportation, whether of the inferior or superior species, to seek kindlier fortunes in foreign parts, but fail to comprehend the necessity for any other country outlaying money or exertions to bring them into theirs. Moreover, it is a law of Nature that the slower and more naturally the growth, the solider and more lasting the production.

Hence, for whose advantage is it to flood the country with cheap laborers, as so loudly demanded by these exploiting capitalists and their pensioned agents, unless it be to add to and still further impoverish that

throng of serf-like wealth developers whose toil inures alone, under our present infamously conducted governmental system, to the immediate and sole advantage of this avaricious and predacious few? These, in conjunction with a few kind-hearted but mistaken ethnologists and fanatics of the "Universal Brotherhood" school, demand that we shall let in as many Malayans, Mongolians, Nigritians, and other varieties of the *genus homo* as may choose to come amongst us, and shall prove docile, apt, and willing proletaires. For whose advantage and what advantage, I repeat, to thus hastily populate our country with all sorts of the meaner breeds of the human races (sufficiently cursed, as it is, with such), looking alone to the amount of low wage muscle they can and will bring to bear? If an increase of population be desirable, let us look more to the quality than the quantity. But wherefore this hurry to increase, whether with good or bad importations? Let us the rather improve the breeding and condition of those already here. Suppose many thousands of acres shall remain uncultivated, where is the harm? Have they not remained so for some considerable period without any detriment to the American people? If not all cultivated in our day and generation, they will be left in a virgin and richer condition for our descendants. As a rule, too, the sparser populated a country the better the material condition of its inhabitants and the more virtuous. Let us have wiser and juster laws to govern such as choose, unaided, to come amongst us (provided they be of an acceptable quality) and shall be born here. *This is the grand desideratum.*

The entire law-making and administering functions of our State Government, from its foundation to the present time, have been, with rare exceptions, subservient to the dishonest and injurious schemes of monopolists and speculators. What few laws the Legislatures have enacted in the interest of justice and the people have been annulled by the decisions of the Courts.

A versatile, and, doubtless, well-feed penman has, in the service of our all-grasping Plutocracy and their alien *confrères*, laid before your honorable body a voluminous pamphlet upon the subject of the reclamation and irrigation of certain extensive tracts of California soil by a proposed to be formed "Anglo-American Syndicate." I desire to enter my emphatic protest against any aid or encouragement upon your part being extended to such scheme. My belief is that, for various considerations, no non-resident foreigner should be permitted to own an inch of ground in the State. I here present, as all-sufficient, but one objection—the draining of revenue by these absent proprietors, to be expended in other countries. The State has been already largely injured by the absenteeism and lavish outlay of money—mostly in Europe—upon the part of many of our wealthy citizens.

A proper system of irrigation and reclamation of vast tracts in California is of the highest importance; but not only do I protest against such being done by foreigners, but by any individual enterprise, under specially and unduly privileged franchises and subsidy assistance, since this is calculated to still farther aggregate the land into the hands of a few, and, likewise, place a large proportion of that held by small proprietors at the mercy of capitalists having possession of the water privileges. Both of these great enterprises should be conducted by or under the special control of the State. But there being no immediate necessity for these important undertakings, they should be postponed until some other form of government, or radical change in the existing, shall have been established, and properly endowed men selected and enclothed with authority to conduct it.

Finally, I enter my solemn protest against that mistaken idea which appears of late years to have alone been entertained and acted upon by American law-makers and administerers, that governments are instituted and laws enacted primarily and chiefly for the protection of property, instead of primarily and chiefly for the protection of individuals; from which misconception has arisen that tendency to frame and administer all our statutes in the interest of capitalists and speculators—of the more cunning, unscrupulous and acquisitive few—and given practicalization to what may be preëminently denominated an American maxim, that "A poor man has no rights a rich one is bound to recognize;" which practical working of our governmental machinery is discouraging all legitimate labor, fast filling the land with revolutionary-menacing idlers, and thus impoverishing and polluting nearly all. Such partial laws and inequitable decisions, by discriminating against the agricultural and other productive pursuits, has disheartened many engaged in these industrial avocations, and driven or encouraged them to seek fortune and position in the more favored ranks of the trafficking and other non-producing speculators. Thus have these laws (construed alone by our Courts in favor of such speculators) encouraged idleness (except the cunning industry of a wicked wit), discouraged honest employment, and prompted the mass to strive for gain through the various gambling and tricky availments in vogue.

The following appropriate sentiments, extracted from the Governor's Inaugural Address, are so logically correct and so admirably expressed that I insert them here:

"When the accumulation of wealth is the legitimate result of energy and sagacity, it is a stimulant to industry and enterprise, and their just reward; but when conferred by favoritism of law, it is first an incentive to and then a source of political corruption. If any favors are granted at all, they should be to the weak, and not to the strong. But the law should be no respecter of persons, if for no other reason, because favors granted to any are certain to gravitate to the strongest power."

Mr. Browne's *brochure* contains an adopted report made to the San Francisco Chamber of Commerce, by a member thereof, in which this Anglo-American Syndicate scheme is indorsed. But ought such persons to have much weight with your honorable body, composed, as they are, of that class (merchants and money-changers) who, in the severe but truthful language of the great Napoleon, are mostly "devoid of patriotism, governed alone by an unenlightened selfishness, and will sell their country for a sous?"

The author and compiler of such pamphlet, like all our mercenary writers and pseudo-statesmen of this wealth-worshipping age, takes a materialistic view alone in his political economy theories and projected enterprises. He even affixes a certain valuation per head, in dollars, upon every immigrant arriving within our borders. Should this be the paramount rating of such additional population—as is evidently the calculation of such writers and their abettors—why not reopen the African slave trade and import some millions more of these obedient and brawny-muscled Ethiops?

CHARLES E. PICKETT.

Sacramento, March, 1872.

BIENNIAL REPORT OF THE COMMISSIONERS

TO MANAGE THE

YOSEMITE VALLEY

AND

MARIPOSA GROVE OF BIG TREES.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

To His Excellency H. H. Haight,
Governor of California:

Sir: The Commissioners to manage the Yosemite Valley and the Mariposa Grove of Big Trees beg leave to submit their biennial report as follows:

The tracts of land known as the Yosemite Valley and the Mariposa Big Tree Grove were offered by Congress to the State of California in 1864, on condition that the State should hold them for public use, resort, and recreation, and that they should be inalienable for all time. This gift of Congress was accepted by the State of California through its Legislature and on the conditions imposed, by an Act approved April second, eighteen hundred and sixty-six. At the very next session, however, in eighteen hundred and sixty-eight, this body proceeded to alienate a portion of the territory thus acquired, so far as it was in their power, by passing an Act, over the Executive veto, granting to Messrs. J. M. Hutchings and J. C. Lamon each one hundred and sixty acres of land in the Yosemite Valley, asking Congress to confirm this action; the grant to said Hutchings and Lamon being made with the condition that it should "take effect and be in force from and after its ratification by the Congress of the United States." Such ratification, however, has never been obtained, but, on the contrary, has been refused by Congress; consequently, the grant to Messrs. Hutchings and Lamon remains null and void.

In view of the circumstances above cited, and considering the fact that the claimants already named and others refused to recognize the authority of the Commissioners as representing the State of California, it was found necessary to institute legal proceedings in order that the status of the Commissioners might be defined and the rights of the State established. A suit was therefore commenced against J. M. Hutchings in the Thirteenth District Court, and this suit was decided adversely to the Commissioners. On appeal to the Supreme Court, however, the decision of the lower Court was reversed; but the case being carried to the Supreme Court of the United States on a writ of error, it has not yet been decided in that Court. So that the Commissioners have not been placed in full control of the premises in question.

In view of these facts, the Commissioners, although fully persuaded that the judgment of the Supreme Court of the United States, like that

of the State of California, will be given in their favor, and believing also that Congress will not reverse its action in the matter and ratify the grants made by the Legislature to Messrs. Hutchings and Lamon, have not been inclined to enter into any systematic and final arrangements for the improvement of the Yosemite Valley, but have preferred to postpone, so far as they reasonably could, all decisive action in that direction. This they have also, in a measure, been obliged to do, because the Legislature, in view of the supposed uncertainty with regard to the claims of Messrs. Hutchings and Lamon, has not, at either of the two last sessions, made any grant of funds to enable the Commissioners to pay the expenses which they would have to incur in making the necessary improvements.

Permission has, however, been given by the Commissioners to certain parties to construct trails and roads in and about the valley; these parties paying the expenses of such improvements, and being allowed therefor to charge a reasonable toll for the use of the same. It has, however, always been stipulated that such roads and trails should be given up to the State and made free to the public, whenever the Legislature should see fit to place the Commissioners in such a position that they could refund the amounts expended in these improvements.

During the past two years, the facilities for travel to and from the Yosemite Valley and the Big Tree Grove have been greatly increased. A wagon road, on an easy grade, has been opened by private enterprise, from White & Hatch's to Clark's Ranch, a distance of about fourteen miles. On the north side of the valley, a wagon road has also been built from Big Oak Flat to Cascade Creek, near the edge of the cliff from which the descent is made into the valley. Saddle trains have been run on each of these routes from the termini of the Central Pacific Railroad at Modesto and the Copperopolis road at Milton. Within the valley, the facilities for reaching points of interest have been greatly increased by the various trails made, and especially by that one which takes the traveler out by way of the Nevada Fall and the Little Yosemite, and around by Glacier Point and the Sentinel Dome. Parties have also begun to construct a trail down into the valley by Sentinel Rock; and when this has been accomplished, and a similar trail made on the north side, through Indian Cañon, and thence, by way of the Three Brothers and El Capitan, to Cascade Creek, the tourist will have the choice of a variety of routes into and out of the valley, each affording the most stupendous views of the scenery of the Yosemite and its surroundings.

The Commissioners desire, as soon as they have been placed in full control of the valley, to devise and carry out gradually a systematic plan of operations by which all interesting points shall be rendered accessible by safe and easy trails within the boundaries of the grant, and that these should be entirely free to the public, so that the traveler having once entered this magnificent temple of nature shall be allowed to circulate freely, and not be the victim of innumerable petty charges, as must be the case if the present system is continued. The cost of the necessary improvements will be but trifling in comparison with the advantages gained, merely looking at the matter from a business point of view. The travel from without the borders of the State to the Yosemite Valley is already large, and is rapidly increasing. At a moderate computation persons attracted to the State by the fame of the wonderful and unique scenery of the Yosemite expended during the past season over a quarter of a million of dollars within our borders,

and the surest way to cause a rapid increase of the sums thus expended here will be to remove embarrassing and vexatious restrictions to travel, and to offer every inducement for a prolonged stay to those who visit us as tourists, whether in search of health or of the picturesque and grand in nature. Besides the mere pecuniary considerations, however, the State should have a pride in treating this property—its magnificent public park—in a liberal spirit, and not limiting the scope of its vision to the mere question of dollars and cents. Having accepted the Yosemite Valley from Congress, and promised to keep it for all time as a place of public resort and recreation, the State cannot now withdraw from the compact without incurring the ridicule of the whole civilized world. The only reason that could be given for such withdrawal would be that to carry out the pledged faith of the State would involve the expenditure of a small sum of money—an outlay which cannot fail, in the future, to be repaid many times over.

The Commissioners have no desire to do injustice to persons having claims for improvements in the valley. They would recommend that a special Commission be appointed by the Legislature to investigate these claims, and to report, with as little delay as possible, what they are, and what amount of money would be required to make an equitable settlement of them. The longer this is deferred the more difficult of accomplishment it will become. Already some of those whose ideas in regard to the sums of money equitably due them from the State were at first tolerably moderate, have had them very considerably magnified, as the subject has been more and more talked about during the half dozen years which have elapsed since the valley was ceded to the State.

Mr. Galen Clark has continued to perform the duties of Guardian of the Valley and of the Big Tree Grove during the past four years, without payment of his salary, and the Commissioners earnestly recommend that an appropriation be made to pay what is justly his due, as well as for his services during the next two years. For this purpose, and for various improvements which they desire to effect in the valley and grove, and for all other expenditures necessary in order to carry out the objects for which the Commission was organized, they ask for an appropriation of twelve thousand dollars for the two fiscal years commencing July first, eighteen hundred and seventy-two.

Respectfully submitted, by order of the Board of Commissioners to manage the Yosemite Valley and the Big Tree Grove.

WILLIAM ASHBURNER,
Secretary of the Board.

REPORT

ON

THE STATE PRISON

BY THE

Joint Committee of the Senate and Assembly.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

To the Honorable Assembly of the State of California:

Mr. Speaker:

The Joint Committee of the Senate and Assembly respectfully submit the following report:

We have visited the State Prison at San Quentin, examined the buildings, grounds, workshops, every department of the prison, examined the officers now connected with the prison, and also one of the late officers, and several of the contractors employing convict labor; also the commissary department, and the books of the prison. We also visited the lands belonging to the State, situated one and a half miles east of Folsom, bordering on the American River, and purchased by the State as a site for a branch State Prison.

PRISON AT SAN QUENTIN AND GROUNDS.

The prison is situated on Point San Quentin, in Marin County, bordering on the Bay of San Francisco, and distant from the City of San Francisco about twelve miles. The land belonging to the State consists of about one hundred and thirty acres; but with the exception of the space occupied by the buildings and yard, five or six acres cultivated as a garden, and the brickyard, it is of little value except for pasturage, and in past years furnishing clay for making brick, but which is now exhausted for that purpose, making brick in former years giving employment to a large number of prisoners. The prison grounds proper, inclosed by a wall, contain about six acres. The wall is about twenty feet in height. The lower half is built of stone, and the upper half of brick, the brick portion being in a state of disintegration. The

wall extends about five hundred and fifty feet from east to west, and about four hundred and ninety feet from north to south. The buildings are as follows: One, fifty by twenty five feet (outside the walls), occupied by the Clerk and Commissary of the prison as offices in the upper story, the basement being used as a butcher shop and storeroom; a three story building, fifty-four by forty feet, occupied by some of the officers of the prison and the prison physician and family. On the south side, and adjoining this building, is the main entrance to the prison, through an archway in the wall, closed on the inside and outside with iron gates. Adjoining this is the kitchen, dining room for officers and guards, in a one story brick building, sixty by twenty feet, made of brick of very poor quality, and which, together with the building first above mentioned, will serve but a very few years, and will have to be rebuilt of more substantial material, the present buildings named being entirely unfit for the purposes for which they are now used.

The buildings in the yard consist, first, one two stories high, forty by twenty feet, built of brick of a poor quality, the lower story being occupied as offices by the Warden and Turnkey, the upper story being used as a female prison and a store room for clothing. Adjoining the building in the rear is a yard in which the female prisoners are occasionally allowed to walk. Second, the wash house, two stories high, thirty by thirty-seven feet, substantially. Third, hospital building, two stories high, the upper story being used as a hospital, the lower for hospital kitchen and lockup—a room mostly used for convalescent patients. In the basement is the dungeon of the prison, it contains fourteen cells, seven on each side of the passage way, each cell eleven and a half by six feet and nine feet in height; near the entrance to the dungeon stands the whipping post. Fourth, a work shop, two stories, one hundred and fifty-nine by eighty feet. Fifth, a work shop, four and a half stories, two hundred and fifty-eight by sixty feet. Sixth, three buildings containing cells situated parallel to each other, two of which are one hundred and seventy-four by twenty-three feet, and contain four hundred and twenty cells, each eight feet long, four feet wide, and six and a half feet high; each cell being furnished with a bunk, two pair of blankets, a straw tick, and such other articles as the prisoners can procure. The third building is one hundred and eighty by twenty-eight feet, two stories, the lower one being divided into seven rooms, each occupying the full width of the building. The upper story contains forty-eight cells, each ten feet long, six feet wide, and eight feet high. This is the only stone building on the premises, all the other buildings inside the walls being of brick.

A portion of the open space inside the walls is cultivated as a flower garden with a fountain in the center, and which presents a beautiful appearance and is kept in excellent order.

OFFICERS AND SALARIES.

The Lieutenant Governor who is one of the Prison Directors is ex officio Warden of the prison and except when the Legislature is in session resides at the prison, and receives a salary of ten dollars per day—the other officers receive monthly salaries as follows, to wit:

Commissary	$200 00
Clerk	125 00
Captain of the Guard	150 00
Captain of the Yard	150 00
Turnkey	125 00
Two Gate-keepers, each $100	200 00
Physician	150 00
Instructor	100 00
Engineer	100 00
Steward	75 00
Two guards, each $60	120 00
Forty-eight guards, each $50	2,400 00

NUMBER OF PRISONERS AND HOW EMPLOYED.

The number of prisoners at the time of our visit was eight hundred and eighty-three. The highest number ever in the prison was nine hundred and sixteen at one time. The average number employed by contractors is four hundred and twenty-one. About thirty are in the hospital, and fifty more under medical treatment, some of whom, however, continue at work. The most of those sick were diseased when committed to prison. About two hundred, according to the last report of the Directors, are in the employ of the State as waiters, cooks, clerks, washmen, gardeners, teamsters, etc. During the last Summer one hundred and fifteen were working on contract in the brickyard. There are six females in the prison, who are well provided for and have comfortable quarters.

INDUSTRIES.

A synopsis of the prison industries, furnished us by the clerk of the prison, will be found in the following statement:

Stone & Hayden, saddle and harness makers, have a contract for the labor of two hundred convicts from April first, eighteen hundred and sixty-nine, until March first, eighteen hundred and seventy-two, but their average employment of convicts does not exceed one hundred and fifteen.

Merriam & Cole, furniture manufacturers, have a contract for the labor of from two to three hundred convicts from January first, eighteen hundred and seventy, to January first, eighteen hundred and seventy-four, and their average employment is about two hundred and six.

A. W. Baldwin, boot and shoe manufacturer, has a contract for the labor of from fifty to one hundred convicts from February first, eighteen hundred and seventy, until February first, eighteen hundred and seventy-two, and employ one hundred.

SCHOOL, LIBRARY, AND RELIGIOUS SERVICES.

The chapel is in a room in the fourth story of the largest building, sixty by forty feet, is well lighted, and from its windows an excellent view is obtained of the surrounding country. It is designed to seat six hundred persons; contains a handsome pulpit made by the prisoners, and a handsome cabinet organ purchased with money contributed by the

prisoners. The library contains three thousand volumes. It is well patronized, sixteen hundred books being taken from it during a month. The seats and a large number of the books were contributed by citizens of San Francisco through the efforts of the California Prison Commission. Religious exercises are conducted every Sunday morning by clergymen of different denominations who volunteer their services; all who are not employed at that hour are permitted to attend; about three hundred of the convicts of their own will avail themselves of this privilege; the choir is composed of a dozen convicts. After service the school is convened; about two hundred of the prisoners are instructed in the primary branches by some of the more intelligent and educated of the convicts. During a year and a half of the existence of the school about one hundred and eighty were taught to read and write, and though many of them have been discharged, not one up to this time has been recommitted to the prison. Sometimes the prisoners have an entertainment of their own, consisting of reading, recitations, compositions, and essays prepared by themselves, and occasionally a lecture is delivered to them by a visitor. Professor Carr, of the State University, was one of the recent lecturers. The admission fee received from visitors at the gate is used to pay the expenses of the school and replenish the library, and we recommend its continuance.

DISCIPLINE, CLOTHING, DIET.

Discipline is maintained by forfeiture of time, confinement in the dungeon on reduced diet, and sometimes by means of the shower bath, applied with a hose. The commutation law under which every convict is allowed five days or more each month, according to the length of time he has been in the prison, for good conduct, which reduces the term of his imprisonment that amount of time, has worked well; no other rewards are given for good behavior; all fare alike. All, with a few exceptions, are dressed alike, in what are known as the prison stripes.

Clothing belonging to prisoners sentenced for a year is taken care of and returned to him on his discharge. That taken from those committed for a longer term, is appropriated for general use. Each discharged prisoner is provided with a cheap suit of clothing and three dollars in cash. We recommend that the amount be increased to ten dollars. The food furnished, though plain is good, and is supplied to the prisoners in abundance.

WORKSHOPS.

The only building of much importance in the yard, besides the washhouse, that can be called really good, is the workshop building. In the lower story is the prison kitchen, a dining room, store and engine room; the engine is about fifty horse power, by which the machinery used in the work rooms above are driven; which rooms, including the attic, are occupied by Baldwin, and Merriam & Cole, for manufacturing purposes. This building is the last one erected at the prison, and cost one hundred and thirty thousand dollars.

The other workshop occupied by Stone & Hayden, harness and saddle makers, is old, leaky and in a general dilapidated condition, but with occasional repairing can be made to answer for a few years longer.

CELL BUILDINGS.

The two brick cell buildings, though built at a cost to the State of sixty thousand dollars, are so unsafe on account of being built of defective materials and construction, require constant and vigilant watching to prevent the prisoners escaping therefrom. The cells appear to be kept clean, but are all poorly ventilated. In these cells two are confined, and from the necessity of the want of cells this must be injurious to the prisoners, and should be remedied if possible. There is a bunk in each cell, but the second occupant is compelled to spread his bed upon the asphaltum floor. The third cell building, though the most secure of the three, being built of stone and well constructed, is not fit for the purpose for which it was designed because of the large size of the rooms in the lower story, containing seven rooms which are occupied by from thirty to forty men each, who are thus in unrestrained intercourse nearly two thirds of the time in Winter and more than half the time in Summer. This is to be deplored, because it places the young in crime in direct social intercourse with the most hardened criminals. In the present condition this thing is unavoidable; by placing in each room or cell there are accommodations for only six hundred and twenty-six, leaving two hundred and fifty-five unprovided for. To dispose of this number the rooms are crowded to their utmost capacity; sometimes four persons are placed in the cells above, and in the small ones two. It will thus be seen that if each prisoner was confined alone, as he certainly should be, about four hundred would be without any accommodations whatever, and not more than three hundred and fifty are now actually confined separately.

In the prison buildings there are no suitable quarters for the female prisoners, none for the insane, and no building suited as a residence for the Warden and for officers. The building at the entrance is not more than fit for indifferent lodgings, and the offices scattered about, no two being contiguous to each other. There is no central point of observation from which a view of the entire prison can be had. When the Captain of the Yard is in his office all the cells but a few are hidden from his sight, and is at a considerable distance from them.

THE WALL.

The wall is getting old and begins to show striking evidences of decay, and at no distant day will have to be extensively repaired or replaced, the greater portion of it with a new one. The foregoing shows the bad arrangement of the present accommodations, with their present insufficiency for present use and prospective wants, and the necessity of measures for relieving permanently the present overcrowded condition of the prison. We hope that if any further extension of the prison is made, the extension will not be made until a plan is adopted such as experience elsewhere has shown to be the best, and that all improvements hereafter projected will be made to conform to that plan. Only in this way can the system of patchwork heretofore pursued be avoided.

WATER SUPPLY.

We find a great deficiency in the supply of water, both for use in case of fire and also fresh water, and recommend procuring a sufficient supply.

HOSPITAL.

The present building is well fitted up for hospital purposes, but is entirely too small for present requirements; at it also should be provided a suitable office for the Physician of the prison.

INSANE.

We received a communication written by the physician, Dr. Randall, giving the names of eleven persons now in the prison believed to be insane, and to whom he refers in the following words:

"The circumstances by which they are surrounded are not calculated to ameliorate their condition, but rather to increase their insanity. There are no proper facilities in the hospital department, or elsewhere within the bounds of the prison, for the necessary treatment and management of insane patients. Their access to and intercourse with the other prisoners, their diet and general regimen are certainly calculated to retard and embarrass their recovery, and in some cases, if not in all, increase their existing mental derangement. In the present deranged condition of their minds it is impossible for them to recognize or appreciate properly and rationally the cause of their confinement in prison. They are, therefore, strictly speaking, not undergoing conscious punishment for their crimes, but simply being confined as lunatics, destitute of the advantages necessary for the restoration of their minds to their normal condition. In view, therefore, of their possible recovery, as well as considerations of humanity, I think the propriety of sending them to the State Insane Asylum for such care and attention as individuals in their condition of perfect helplessness so imperatively demands, would be perfectly justifiable. The Governor has the power at any time upon the testimony of the prison officers certifying to the insanity of a prisoner to order him committed to the Insane Asylum; but the prison authorities seem compelled to take him back as soon as his recovery is announced, which announcement is alleged sometimes to be premature. The late prison physician in his report confirms the above statement, and in fact speaks more fully in relation to the condition of these unfortunate men returned from the asylum to the prison."

LIGHT FOR THE CELLS.

Prisoners who have the means of doing so are allowed to supply themselves with light in their cells until nine o'clock at night, while those without means must spend the evening in darkness. It is no uncommon thing for convicts to be detected in pilfering oil or tallow for this purpose, and for which acts they are punished. We think it would be better to furnish all with light until nine o'clock. This would enable those who felt so disposed to employ their time profitably, and would remove the temptation to commit these unlawful acts.

There are forty or fifty convicts who are classified in the report of the Prison Directors as "indigent." They are not sick, but for various reasons are incapacitated for regular labor in the workshops, and being rejected by the contractors are nearly or quite all the time idle. If some light employment was provided for them it would be better for all con-

cerned. Having something to occupy their time they would be more cheerful, and the State would derive some benefit from their labor.

PURCHASE OF SUPPLIES.

On examination of the books of the commissary and the clerk of the prison, under the late administration, we find them well kept and all the accounts kept in perfect order. We discover no evidence of actual fraud, but we are compelled to say that we find that many thousands of dollars have been paid to a single firm doing a wholesale grocery business for merchandise and supplies entirely foreign to the trade of such an establishment, and that such goods, including almost everything from a paper of needles to a steam engine, have been charged not only at full rates but in many instances far above the ordinary market rates, as the bills on file prove. Since the appointment of a new commissary this has been remedied, as we find by the bills of the present commissary that much lower prices have been paid for the goods purchased by him than were paid for similar articles by his predecessor, except for staple articles, and of those are now furnished by contract at a lower rate. We therefore recommend that all supplies required for the prison should be purchased under contract for each article required, to be awarded to the lowest bidder.

The present commissary system should, in our opinion, be abolished, for it is to say the least susceptible of great abuse. An officer bearing the name of Commissary or Steward is of course indispensable, but he should be instructed to advertise in some daily San Francisco newspaper for everything needed at the prison—say every three months in advance, and the parties agreeing to deliver supplies at the prison as per advertisement—at the lowest price—should be awarded the contract or contracts, they of course being required to give bonds, etc., for the faithful performance or fulfillment of what they undertake to do. This plan we think would save much money to the State, but in order to carry it out fully, appropriations should be made so as to enable the Directors or their subordinates to pay cash down for everything they buy. The credit system is pernicious, particularly in State affairs, and should be avoided as it invariably leads to corruption.

PARDONS.

We recommend that a law be passed authorizing the Governor to appoint a Board of Pardon Commissioners to consist of three prominent persons without pay, except actual expenses, to meet twice a year to take into consideration and thoroughly investigate all applications for pardon, the Governor to act upon their recommendations.

We think that the tract of land belonging to the prison at San Quentin should be inclosed with a good fence.

DISCIPLINE.

From all that we are capable of judging, we find the present system of discipline to be strict but humane. In some extreme cases for flagrant offences committed by the prisoners the lash is sometimes used; and we are informed by the officers that many offenders express a

preference for it to incarceration in the dungeon or solitary confinement. We however recommend the abolition of all corporal punishment, believing it would result in benefit to the prisoners eventually.

CONVICTS TO SHARE IN THEIR EARNINGS.

We believe that when the management of the prison shall become permanent and systematized, it may be that allowing the convicts as a reward for good behavior a small percentage of the earnings of their labor, as is advocated by many experienced officers, would tend to promote discipline, and also to increase the value of their labor, by encouraging them to greater industry and the exercise of better skill.

PRISON FINANCES.

The following statement, furnished by the Clerk of the prison, shows the condition of the prison finances:

Total cost of prison from November 1st, 1869, to November 30th, 1871—twenty-five months	$356,743 45
Total amount of earnings during the same period	128,530 87
Excess of cost over earnings	$228,212 58
Indebtedness, including all funds to December 1st, 1871	39,078 04
Assets, consisting of personal property, etc	13,877 30
Amount of scrip issued monthly for salaries to officers and employés	4,500 00
Actual cash value	3,900 00
Loss to employés per month	$600 00

The above shows that the State Prison annually costs the State a large sum of money, to wit: during the past two years about one hundred and ten thousand dollars per year.

We recommend that the officers, guards, etc., be paid in coin hereafter.

CONVICT LABOR.

The price now paid by contractors for prison labor is forty cents per day, and not over half of the entire number of convicts can be hired to contractors at that price, without additional workshops. Thus it will be seen at a glance that the State at present cannot find employment for more than one half of the convicts, and when the present contracts expire, we believe and recommend that a higher price be demanded for convict labor.

CLASSIFICATION AND REFORM.

The records of the prison show that a very large proportion of the prisoners are young men, confined for their first offense. They at present mingle with and are in daily intercourse with the most hardened criminals. At present this cannot be prevented, by reason of a want of classification of the prisoners and a want of suitable buildings. We

believe that under a proper system many of these young men could be reformed, if confined in buildings separate from the older prisoners, and therefore recommend that a liberal appropriation be made by the Legislature, and that the reforms above and herein advocated be carried into effect by the Board of State Prison Directors, as they in their judgment and discretion may deem advisable for the welfare of the prisoners, the government of the prison, and the best interests of the State at large.

BRANCH PRISON.

In relation to this subject your committee has received the following memorial:

"That the Legislature of this State, in the year eighteen hundred and fifty-eight, by a nearly unanimous vote created the law of that year authorizing the establishment of a Branch State Prison (see Statutes 1858, pages 259, 60, 61), which, it is believed, was in accordance with the sentiments of the people of the State. A supplemental Act was passed, making it obligatory on the Board of State Prison Directors to make the selection and location of the site for the Branch Prison, and to cause the lands so selected to be conveyed to the State (see Statutes 1867–8, pages 627–8). In pursuance of said Acts, the Board of State Prison Directors, in the month of June, eighteen hundred and sixty-eight, made the selection, and established the site for the Branch Prison on the south bank of the American river, in the easterly portion of Sacramento County, on lands belonging to the Natoma Water and Mining Company. This selection was made under the provisions of the latter Act, as 'the place offering the greatest advantages for prison purposes' (see Act). In relation to the provisions of the law, and the selection of this site, as the site offering the greatest advantages, your memorialists earnestly ask the attention of the committee to the report of General B. S. Alexander (who was called by the State Prison Directors to examine the proposed site and report thereon), 'on the merits of the proposed site of a Branch State Prison near Folsom, Cal.,' and also to document entitled 'Branch State Prison, location, advantages, etc.,' copies of which are submitted with this memorial.

"After the selection and location had been made by the unanimous act of the Board of State Prison Directors, a perfect title with full warranty of the premises so selected was conveyed to the State of California by your memorialists. The tract of land so conveyed embraces about three hundred and sixty acres of land, and had at that time been improved by opening and working some of the extensive quarries of granite situate thereon and by the construction of a railroad of two miles in length connecting it with the Sacramento Valley Railroad, and by this last mentioned road with all the other railroads of the State. This railroad is constructed on a grade exactly level to an inch from one extremity to the other, and with "T" rails, and in all respects equal to the best built railroads. The quarries already opened and worked are well worth to the State five hundred dollars per month. Besides the quarries and railroad there are many other costly and valuable erections and improvements thereon, but it is not within the scope or intent of this memorial to set out the advantages, value, etc., of these premises. The committee are referred to the above mentioned reports and other sources for information on that point, and to the premises, by personal inspection of the same.

"The price agreed to be paid for the premises by the State, acting by its Board of State Prison Directors, is as follows: 'Fifteen thousand dollars ($15,000) in convict labor, rated at fifty cents per diem,' no part of which has been paid.

"The State Prison Directors in their report of eighteen hundred and sixty-nine and eighteen hundred and seventy, in this behalf, report as follows:

"'The Board decided in favor of Folsom, whereupon the Natoma Water and Mining Company executed to the State a deed for a site for a Branch Prison for about three hundred and sixty acres of land about two miles above Folsom. No appropriation however having been made for that purpose, no steps have been taken to erect said Branch Prison.' (See Report of Directors of California State Prison, page six.)

"Your memorialists therefore crave leave to invoke the attention of the Committee to the absolute and mandatory provisions of the law above named, as follows:

"'Sec. 7. Whenever a site shall be chosen for a branch prison, as provided for in this Act, and the property shall be duly conveyed to the State, the Board shall as soon as practicable cause such a number of convicts as they may deem proper, first selecting those whose term of imprisonment is about to expire, to be removed from the State Prison at San Quentin to the said branch site.'

"Your memorialists, therefore, in view of all the premises, do most earnestly and expressly remonstrate and protest against the diversion and use of all appropriations of money and the employment or keeping in idleness of all the convicts of the State, at San Quentin, in view of the facts above set forth, and against the plain and express provisions of the statute law of the State.

(Signed:) NATOMA WATER AND MINING COMPANY."

We find the facts stated in this memorial to be correct; so that a branch prison is fully instituted by law; its site has been selected and determined according to the provisions of the statute. We have examined this site, and it is manifestly an exceedingly eligible situation.

The water power canal, which is to be above the highest water in the river, passes alongside of and on a level with the site of the workyard of the branch prison. The prison buildings might be built in immediate proximity, but some seventy (70) feet higher, while overlooking these the hills on the north and south sides rise from one hundred to one hundred and fifty feet higher, sloping away from the river into gentle undulations of land suitable for agricultural purposes. The water power which will be available at this site will doubtless become of great importance as affording a cheaper motive power, than could otherwise be obtained. Here could be made from the woods of the mountains, near at hand, the vats, casks, barrels, and wooden vessels so much needed by the vinegrowers, and which are so easily made by machinery.

From jute and other textiles might be made the bagging so much in requisition by the farmers for their grain, and perhaps here might be made carpeting, of which there is no manufacture on this coast. We

will here quote General B. F. Alexander's report to the State Prison Committee:

"The quarries will afford practically an inexhaustible supply of granite of as good, and so far as I know, of a better quality of granite, at least for architectural purposes, than that furnished by any other quarry now in working order with which I am acquainted. Of this granite the walls, buildings, and workshops of the Branch Prison can be built; an inexhaustible supply for the future, to be dressed by the convicts and sent to market either by the State or by contractors, as the proper authorities may elect. While on this part of the subject it may be remarked that the reports of our State Prisons in the older States, in reference to the employment of prisoners, show that of all the trades, when the material is easily obtained and the market good, that of stone cutting is the most to be preferred. At several of the State Prisons in the Eastern States this occupation is followed to the exclusion, to a great extent, of all others; and it is not a little remarkable that such prisons not only support themselves, but are a source of revenue to the States in which they are situated."

The Prison Discipline Society of Boston, in one of their reports, while speaking of stone cutting, say:

"In regard to this business, it is worthy of remark that the raw material is cheap; it is not easily injured; the art of cutting is soon learned; it is laborious and healthy; it requires little superintendence; the tools are few and simple; the demand for the work is great; the business on the whole more profitable to the institution, and the knowledge of the art very useful to the convicts after they leave the prison."

As to the cost of buildings, the committee having no higher or better authority than General Alexander's report, are forced to give his estimate:

"I will say that by using convict labor as far as possible, a model prison of stone, perfectly fire proof, to accommodate one hundred and fifty (150) men, each in a separate cell, together with the necessary outbuildings, may be built at this place at a cost to the State of not more than fifty thousand dollars ($50,000). Any addition in the future to such a building could be built at a less cost in proportion to the accommodations to be afforded, for many expenses, such as the introduction of water, the making of roads, etc., would have to be incurred in starting the buildings of such an institution, which would not have to be repeated in making future additions."

It may be remarked that the employments proposed would not come in competition with artisan labor in this State to any extent. If the expectations of the friends of the branch establishment can be realized it will be of immense advantage to the State, in advancing the manufacturing interests of the State, and possibly may become the principal prison and the institution at San Quentin a reformatory one.

ROCKLIN.

Your committee also visited Rocklin and examined the three hundred

and twenty acres of land given to the State by the Central Pacific Railroad Company. Upon this land are extensive granite quarries which have been worked, and are immediately contiguous to the Central Pacific Railroad track, said land having been given to the State for prison purposes if the State desired so to use it.

At Roseville a gentleman named S. Boutwell offered to donate three hundred and sixty acres of agricultural land to the State for prison purposes.

We further recommend that such legislation be had as in the future will take the government and management of the prison entirely out of politics, and that the Constitution be so amended as to make the election of Warden permanent.

E. T. CRANE,
Chairman of Joint Committee on State Prison.

MINORITY REPORT

OF

The Special Committee on Assembly Bill No. 305.

AN ACT TO PROVIDE FOR FUNDING THE INDEBTEDNESS OF THE RECLAMATION AND LEVEE DISTRICTS OF THE STATE.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

MR. SPEAKER:

The minority of your committee to whom was referred Assembly bill number three hundred and five, an Act to provide for funding the indebtedness of the reclamation and levee districts of the State, have had the same under consideration, and would respectfully recommend that it *do not pass*, for the following reasons:

Our first objection is founded against the system of reclamation adopted by the various districts for which this bill proposes to provide funds. We believe, and the history of our State bears us out, that the levee system alone and by itself is wholly inadequate to a permanent reclamation. In other words, it is a failure. We find that vast sums have been expended by State authority; still larger amounts by districts, and much by private enterprise, in the vain attempt to confine our streams within their channels. But to-day, at an elevation above tide water there is perhaps not an acre which was in every respect swamp land that is reclaimed; and certainly, taken as a whole, but little benefited. To the contrary, however, we find in many places permanent injury has been done by cutting and destroying the natural banks of our streams in such a manner as will almost wholly prevent them being restored.

Taking our reclamation as a whole, we are perhaps no better off to-day than had we sunk our money in midocean, save, perchance, what we may profit by the experience of the past, if we are wise.

In looking at the topography of our valleys, we find that following the general course of and adjacent to our rivers are large basins or troughs, which serve as reservoirs for flood waters, which are conducted into and out of them by various sloughs which nature has formed for that purpose. It is estimated by eminent engineers, that through these troughs or low lands there is, in times of flood, twice the volume of water escapes that is discharged by the river proper. Hence we cannot believe it possible, much less practicable, to confine these waters in flood times within the channels of our narrow and crooked streams, where the water is checked, retarded, and diverted at almost right angles every few hundred yards of its progress, and by which route it must flow twice or thrice the actual distance to find its outlet. We are firmly of the opinion that there should be some general plan of reclamation adopted, embracing pretty much all our swamp lands, and by which the surplus waters in times of extraordinary floods, should be

conducted the most direct route to tide water. Thus our scattered efforts at reclamation would be concentrated and made efficient, and not frittered away as in the past. We could then reasonably expect, at no great distance in the future, to behold happy homes and fruitful fields, where now, after all our efforts, nothing remains save water wastes.

Our second objection to this bill is that it permits an issuance of bonds *ad infinitum*. We believe it a ruinous policy to permit, by authority of State, any body of men to pile up an indebtedness without limit or restriction. We hold this objection to be a vital one, inasmuch as the title to a very large portion of these lands yet remains in the State, and will most assuredly revert to the State, encumbered to any extent these districts may deem proper in case they fail of reclamation, which we believe inevitable under the present system. Especially would this be the case with those tracts that are the most difficult of reclamation that had been the least benefited by works performed, and that had proved delinquent in the payment of most, if not all the assessments. There is also a question whether the State may not become liable for these bonds, especially so in case a district becomes bankrupt, or the lands revert to the State. We think it would be a step in the right direction, and a very wholesome measure for the State to require payment in full for all these lands before it authorizes bonds to issue to any amount that land-grabbing speculators may find to their interest.

We find a third objection to this bill in the provision which provides for funding the back assessments which have been paid upon these lands. We fail to see any good reason why the money, with interest upon the same, which has been squandered in futile attempts at reclamation, most of which has been swept into the ocean, should at this late day be charged up against the land in the shape of bonds, and set to accumulating interest for the next twenty years to come. When to pay the interest upon and to extinguishing the debt thus revived you proceed to assess the land, in many cases it will simply be calling back that which has been paid and the money squandered. This feature is open to suspicion, and may be a short way for some unfortunate speculators to get returns upon a bad investment, made years ago. It also would lead to the belief that the movement was for speculative purposes only, and that they had no design to accomplish or but little faith in a permanent reclamation, and were desirous of shifting the results of a failure from their own shoulders.

A fourth objection to this bill consists in the fact that there is no appeal from the assessment made by the "Assessment Commisioners," however erroneous their judgment may have been; and as there is to be but one assessment for the entire twenty years, we can readily perceive the influence that will be brought to bear upon these Commissioners by parties largely interested in the scheme. In a matter so difficult and intricate, even with the most *clear-headed*, *honest*, and *uninfluenced* Commissioners, there certainly should have been some provisions for an appeal; especially so, when their judgment must be based upon a supposed benefit to be derived from the works yet to be constructed. We believe, also, there may be injustice done by adopting plans designed only for a partial reclamation in the outset, because the plans when carried out are to confer the benefits, and the assessments are to be made in proportion to the benefits to be received.

There is also an objection raised by many to the rule of allowing a majority in acreage to control the affairs of the districts. In addition to the argument that a small holder's land is as valuable to him as is a

large holder's (it being their all in both cases), it is urged that the least valuable, the lowest, and most difficult lands to reclaim, are held in large tracts and by speculators, while the best lands and those that require but little reclamation are held in small bodies and by actual settlers; and as districts are formed by the votes representing a majority of acres—Trustees elected in the same way—the Trustees have the adopting of plans, the letting of contracts, the drawing of warrants in payment for work done, and the general supervision of the whole matter; therefore it will generally occur that two or three men will organize the districts in their own interests, elect themselves Trustees, contract with themselves at prices two or three times the actual cost, and thus escape their proportion of the cost of the works, and frequently line their pockets besides. We are aware that majority in acreage has been the manner of organizing and managing our swamp land districts in the past. But as much of our swamp lands are now held in large tracts we think a majority of owners to govern in reclamation efforts in the future could work no serious hardships, but would very likely cause whatever effort may be made to be made in the interest of the many, and not the few, and would certainly prove a healty check upon extravagance, speculation, and fraud.

To recapitulate:

First—The system of reclamation for which this bill proposes to raise funds is inadequate and has proven a failure.

Second—We believe it bad policy to authorize districts (after organized and run in the interest of speculators and monopolists) to create a debt without limit or restriction against lands, much of which the title yet remains in the State.

Third—We think it downright folly, at least, if not open to suspicion, to revive an old extinguished debt for the sake of funding it to run twenty years.

Fourth—In a matter of so much difficulty as levying assessments in proportion to benefits yet to be received, there certainly should have been some chance of appeal from the decisions of the Commissioners, especially so when there is to be but one assessment for the purposes of this Act.

Fifth—We believe it would be beneficial for a majority of owners instead of a majority of acres to manage reclamation projects in the future.

In view of the great importance to this State of a permanent reclamation of these swamp lands, we cannot refrain in this connection from calling attention to a plan of reclamation proposed by the Commissioners appointed by the Legislature of eighteen hundred and sixty-eight, in their report to the Legislature of eighteen hundred and seventy, now on file in the Secretary of State's office. The leading feature of this plan consists in constructing a canal of sufficient capacity, by excavations and embankments, from a point near the Butte Mountains, Sutter County, to Suisun Bay, Solano County, crossing the Sacramento River at a point a few miles below Knight's Landing, into which all waters should be conducted that exceed the capacity of their channels. We believe that in this proposition is embodied the only feasible plan of permanent reclamation. The estimates of the entire work in all its details was set by the Commissioners at five dollars per acre.

This plan met with no favor by the projectors of reclamation schemes. The reason assigned was that it was a work of too great magnitude, and required too great an outlay. They surely can urge this objection

no longer. The friends of this bill admit that they expect to expend that amount or more per acre in carrying out their plans, and as they have not the money they urge the passage of this bill to give them the credit.

It is believed by many that the State must eventually reclaim these lands, if they are reclaimed at all; and in view of the ruinous policy pursued in the past in the management and disposition of the lands belonging to the State, and remembering that almost every change in our land and reclamation laws have been made in the interest of speculators and schemers, and bearing in mind the futile attempts at reclamation, it would be well for us who are legislating upon this subject, and are about lending the credit of the State in this matter of reclamation, to pause before we complicate matters more, and remember that these lands were granted to the State by the Federal Government to be reclaimed for the benefit of the settler—not the speculator; for the benefit of all—not the few.

C. P. BERRY.

I concur: J. N. TURNER.

REPORT

OF THE

COMMITTEE ON CORPORATIONS

ON

SENATE BILL No. 5,

AN ACT TO AMEND AN ACT ENTITLED AN ACT TO PROVIDE FOR THE INCORPORATION OF RAILROAD COMPANIES, ETC.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

Mr. President :

The Committee on Corporations of the Senate to whom was referred Senate Bill Number Five, "An Act to amend an Act entitled an Act to provide for the incorporation of railroad companies and the management of the affairs thereof, and other matters relating thereto," have had the same under consideration and do now report : That they have used the testimony taken before the Committee on Corporations of the Assembly forming an appendix to the report upon the Assembly bills embracing the same subject matter, and find the following to be the substance of such testimony :

Mr. Assemblyman Days

Testified that the principal complaint of Nevada County in regard to railroad freight is, that in the opinion of storekeepers of that county the rates are too high, and that the railroad company has the chance of putting fares up to any amount within the law; also, that through freights coming from the Eastern States are taken first to Sacramento, and afterwards reshipped to place of destination at expense of consignee. The witness says, "I state only what I suppose to be the views of my constituents ; I have no practical knowledge of the matter. * * If I can be satisfied that the people of Nevada County are paying no more than a fair compensation to the railroad company for transportation, then I am in favor of present rates."

Mr. Assemblyman Freeman

Said: One of the bills for reduction of fares and freights was introduced by me. The people of Yolo County have nothing to complain of, but as most of the railroad and steamboat lines in this State are now consolidated into one incorporated company, I fear the people will not be protected in the present low rates, and this bill is to prevent possible higher charges. * * My bill is only to regulate roads in the valleys. No railroad company could afford to build a railroad in Mariposa County, for example, under this (my) bill.

Mr. Assemblyman Barker

Complained that rates are higher to Dutch Flat than to Colfax, but in answer to a question put by the President of the Central Pacific Railroad Company, says there has been a continuing slide between Colfax and Dutch Flat, which has cost more than five times the amount of all freight carried to Dutch Flat since the commencement of the road, and that if it was a local road it could not be supported. The bill meets his views in regard to level roads, but thinks a greater price should be made for graded roads because it costs more. He is satisfied there should be a greater price allowed to the Central Pacific Railroad.

Mr. Banning

Is connected with a railroad from Wilmington to Los Angeles, twenty-one miles in length. He says if compelled to charge fares and freights according to the price mentioned in the bill, "we certainly would have to stop the railroad."

Mr. Binney

Represents the Northern California Railroad, from Mariposa to Oroville. He said: With reference to my own road the effect of the bill would be to close it. My working cost cannot be reduced any lower than at present. The rates we charge are about double that allowed by the Freeman bill, and the road barely sustains itself. The rates proposed could only be successful where the travel and freight is enormous. On my little road I could carry two times the amount of material with but little additional cost, but it is not to be had; the passengers are not here to travel, and the freight is not here to move. A car running full costs very little more than if empty. Perishable and costly freight is to be considered, because liability in case of damage is much greater. Grades must also be considered. I can run as much freight on my road with a small engine as the Central Pacific can with a fifty or sixty ton engine on theirs. Heavy engines increase working expenses by making frequent repairs necessary. It costs as much to get trains down heavy grades as to get them up.

Mr. A. N. Towne

Is General Superintendent of the Central Pacific Railroad and its connections—has had eighteen years' experience. He says, "I do not regard it possible to arrive at a fixed mileage rate for freights and passengers that would apply to all roads in this or any other State. A large engine will haul fifty to sixty cars on a level such as from Sacramento to Rocklin, but the same engine can barely haul nine over the mountain grades. Operating expenses on the mountains are five times greater than on the level.

Mr. Binney

Says: "That on heavy grades it costs as much to get trains down as to get them up—I am inclined to think the expense is greater. On the Central Pacific, wheels last less than half the time they do on level roads in the East. It costs three times as much to operate sixty-six miles of our road as we receive for its portion of the business. That sixty-six

miles, taken by itself, could not be maintained; yet, over that portion of the road we are charging less per ton per mile than is charged on roads in Illinois; and I think in nearly all the States for short distances. Have examined the freight tariffs of nearly all the trunk lines in the United States; I do not know of any that does not charge more for some classes of goods and some distances than the maximum rate allowed by law in this State. If we are restricted as proposed, we would have to take off many of the trains. From Modesto to Bear Creek—forty odd miles—there are not six houses. You cannot travel the same distance by rail in any part of Illinois without seeing six hundred houses."

The witness also draws a contrast between the small farms in other States, each having a house and contributing business to a road, and the large tracts in this State not generally cultivated. He also says: "There is no road in the world that costs more to operate than the Central Pacific, and none that has not more population and business on its line—even the Panama road has more population to each mile.

Mr. Johnson

Has charge of the Sacramento Valley Railroad. He says we had better take up our iron than adopt the proposed rates; we could not begin to pay expenses; could not operate our road on a fixed or arbitrary rate for all freight, or any other road I have ever known. A rate that would pay from Sacramento to Vallejo would prohibit a road from Sacramento to Shingle Springs. It is impossible to do business at lower rates with our limited population. The population of California is about three persons to the square mile.

Mr. John Corning

Is Assistant General Superintendent of the Central Pacific Railroad and branches. He tells us that in the course of the year "we draw over two thousand freight cars as many miles empty as full." Thinks Mr. Towne's figures correct. There are many points in the bill that might be taken advantage of to the prejudice of the people.

Governor Stanford

Testified: If the bills become a law they would substantially prohibit the construction of railroads in this State, and would suspend the operation of some already constructed. The rates provided by the bills are lower than in any State except Illinois. There are but three States that regulate prices for all distances; they all, except Illinois, permit a higher maximum rate than is allowed in California. Texas allows four times the maximum allowed in this State. There are some goods on which the maximum rate now allowed does not pay the railroad company, although the average price charged is less than about one fifth of that allowed by law. The rates charged are actually less than that charged in most States, even those of the most population and having the largest business in transportation. The roads of this State are only enabled to do business at low rates because substantially under one management. If the roads in this State were divided so that each one hundred miles was owned by a distinct company they could not by charging the full rates now allowed by law make expenses. For short distances the cheapest travel in any of the States is in this State.

It is impossible to regulate fares and freights by any arbitrary rate per mile and yet permit the construction of railroads where the people would like to have them (where they would be willing to pay a price that would warrant construction), except you fixed a rate so high that would permit the construction of a road in the counties where the population is most sparse, where the curves are the greatest and the grades the heaviest, and the roads most difficult in construction and operation. That, of course, amounts practically to no regulation at all. A price that would be remunerative in a valley where the grades are light and population dense, would prohibit construction in mountainous sections with steep grades and scant population. The same difficulty applies to making one price for all classes of goods.

The general freight agents of the United States meet twice a year to classify goods afresh, but even with all their experience their action needs revision from time to time. To carry all goods at the same rate, if the maximum is high enough, will prohibit transportation of some kind of goods altogether. A horse or a mule cannot be carried for the same rate as the same number of pounds of sheet iron; nor carboys of acid as so many pounds of molasses; nor bulky goods, such as furniture, hats, straw goods, or wool, as heavier goods. At the maximum rate now allowed the freight on a buggy carried ten miles would be only thirty-seven and a half cents—not the cost of loading and unloading. The policy of the Central Pacific is to move any freight that will pay cost, than not to move it. I think if the proposed bill went into effect the roads in this State would suspend. The yearly business from Sacramento to the State line would not maintain that portion of the road for one month.

The ordinary rate between New York and Chicago is twenty-five dollars per ton; from San Francisco to New York it is only forty dollars per ton. Connecting Eastern companies allow a through rate from Eastern points to Sacramento or San Francisco, but will not consent to the same rates to Colfax or other way places. Therefore if a merchant of Colfax is purchasing in New York he finds it more to his interest to send his goods to Sacramento and have them sent back to Colfax.

The elements of information necessary to be understood in regulating freights and fares are: the character of the country through which the road runs; its length; the character of its business, whether it mostly carries manufactured or raw products; the amount of population; the cost of the road; its grades, curves, and climate. Manufactured goods will bear a much higher rate of freight than the raw material. The rates proposed would prevent railroads from obtaining money on their bonds from European capitalists. Before advancing money they always want to see the laws under which a railroad is operating, and would know as well as we do that a road could not pay expenses at such rates.

Mr. Stevenson

Has an interest in a railroad in Solano County; the rolling stock is furnished by the California Pacific. He says: "The proposed law would ruin us, we could not turn a wheel."

Major Wilson

Is President of the road in Solano. He testifies: "The bill proposed

would have a mighty bad effect; if it was forced upon us, we should be compelled to shut up."

S. S. Montague,

Is a civil engineer of great experience, and Chief Engineer of the Central Pacific and other roads. He testifies to the following facts: The cost of the Central Pacific is much greater than the cost of any other railroad in the United States. On a grade of one hundred feet to the mile the engine that would move eighty cars on the level would not move more than eight. Engines used over mountains are a much heavier class than is required in the valleys. The comparative cost of hauling freight trains over the Sierra Nevada mountains as compared with valley grades is fully five to one. Expense of maintenance of road in mountains compared with valleys is five to six times as much. From my knowledge of railroading it is impossible to fix any arbitrary rate for freights and passengers for all roads that will be just to all. An arbitrary rate under which a road with easy grades and curves, and doing a large amount of business might operate, and which would regulate the business there, would be prohibitory to roads of more costly construction, heavier grades and curves, with less business. From the nature of the climate and variety in seasons, the maintenance of roads is more costly in California than in other States. It will cost to repair damages caused by the late rains, on the roads I am connected with, not less than a million dollars.

R. P. Hammond

Testified: The California Pacific and the San Francisco and San José roads could not operate at all under the proposed rates. The California Pacific has never been able to earn enough to pay the operating expenses or the interest on its bonds from the time it first started. If these bills become law the result will be to practically stop the construction of railroads. The credit of the roads would be injured by this law. I do not think any of the short roads would be able to run.

Colonel George E. Gray,

Civil engineer, and Chief Engineer of the Southern Pacific Railroad and branches, has had nearly thirty years' experience in the construction of railroads. He says: The proposition of a new tariff, which shall govern all roads, has been investigated very largely in all the Eastern States, and as yet there has not been wisdom and experience sufficient to establish such a tariff. The prices intended to be applied to the operation of all the roads in this State would operate as a prohibition. Length of road always comes in as an element in making up a tariff. The expense of loading and unloading, and station expenses, are just as great for a short distance as for a long one.

It is necessary to consider character of freight. Bulky freights, of light weight, are more expensive to handle. You can fill a car with light goods and not have more than one fifth of the weight the car ought to carry. This shows the practical difficulty of a rigid tariff. Over the Central Pacific the preponderance of trade is in one direction. One source of difficulty and expense in maintenance of roads in California is changing waterways; the rains finding new channels, and meeting the railroad embankments at new points, where no waterways are provided,

causes a great deal of destruction. Again, where a body of water intervenes between the actual termination of a road and the destination of its freight, expenses are largely increased by transhipment.

I could not give any rule by which you could make a rigid tariff to apply to all roads in California; if I could it would be what has not been done yet on any railroad in the East. Such is the result of my experience, and of every practical railroad man that I know. The rates proposed would do as much injustice to the people as to the roads. It would be better for the roads in this State to lock up their equipment and stand idle than to operate under the proposed rates. The New York Central Railroad runs trains of from twenty to fifty cars each at intervals of ten minutes. They carry one hundred tons per day to one ton on the Central Pacific. Their rates are twice to three times greater. In Europe first class passenger rates are nearly the same as in California. The proposed law would have a detrimental effect on the credit of the roads; my firm belief is that under it capitalists would not take another dollar of bonds, and would send back those already taken. If the roads of this State were more divided in management I do not think they would be sustained. The road from Gilroy to Watsonville could not maintain itself as an independent road. If the bill is passed there will be no more lines built, I will guarantee.

L. M. Clement,

Civil engineer, said: It is impracticable to apply this bill to all railroads in this State without doing injustice. The life of a rail on mountain divisions is as one to seven on light grades, and of a wheel, about one to four. In ascending grades the cost of fuel is more, but in descending, the wear and tear of track is more.

Mark Hopkins

Testified: Under the operation of the bill not one of the companies in which I have an interest and with whose affairs I am connected could pay necessary expenses. I believe that while its effect would be injurious to the railroad companies it would be still more injurious to the public. No railroad will for any considerable length of time continue to be operated except it may lawfully earn sufficient to pay expenses. While a very large portion, both of tonnage and passengers, are now carried at less rates than this bill allows, still there is a large part upon which they charge more. This bill would give no such latitude. It fixes a uniform tariff on all kinds of freight, and that which they now carry at less rates would necessarily have to be raised, and that which is now charged more must come down. So that under the operations of this bill all the business, both freight and travel, would not realize sufficient to pay necessary and unavoidable expenses. I believe that the injury to the public would be very much greater than to the railroad companies.

Mr. Larkin

Testified that he introduced the bill upon the understanding that the rates proposed would only affect outside roads—that is, roads outside of the Central Pacific. That he introduced the bill more as a local measure affecting the Sacramento Valley, and the Placerville and Sacramento

Valley roads, upon which the charges for freights and fares were higher than on other outside roads, and under a pledge that he would introduce some bill of that kind.

LELAND STANFORD,

President of the Sacramento Valley and Shingle Springs road, presented exhibits showing that for the last two years the road has failed to pay expenses. That it fell short of paying interest on its debts and working expenses by twenty-seven thousand three hundred and one dollars and ninety-nine cents in the year eighteen hundred and seventy. That the income for the year eighteen hundred and seventy-one exceeded interest and expense account only two hundred and five dollars and ninety-three cents. That the latter result was not due to increase of business but to a reduction of the accommodations, which reduction had to be made to bring the expenditures of the road within its income.

From these facts your committee concludes that it would be unwise and impracticable to attempt any interference with railroad fares and freights at the present time.

First—Because it is not shown that the present rates are burdensome or oppressive to the public, or that the railroad companies are realizing undue profits therefrom; it appearing from the evidence that the California Pacific Railroad, supposed to be the most lucrative road in this State, has never yet earned enough to pay its expenses or the interest on its indebtedness.

Second—Because in the experience of other States such legislation has been found impracticable. 1. Because of the difficulty of making an arbitrary rate on all classes of goods for all distances. 2. Because it has been found impossible to carry freight or passengers at the same rates in localities where the population is sparse as where the country is more thickly settled 3. Because freights or passengers cannot be moved at the same cost over high grades and sharp curvatures as in districts where the road is level and the track straight. 4. Because no arbitrary rate of freight will do justice to the carrier in cases where the bulk or weight is small and the value large.

Third—Because the railroads in this State are exceptional in their extreme grades and heavy expenses of operating, and if we are to legislate in the light of the experience of other States our roads should be allowed higher rather than lower rates, the testimony being that the Central Pacific Railroad is subjected to expenses not incurred by any other road in maintaining very costly snowsheds, which are liable in the long dry Summers of this climate to frequent destruction by fire. That their rolling stock lasts only one fourth of the time that it would to run the same distance on a level road, and that the life of their rails compared with those on Eastern roads of light grade is only as one to seven.

Fourth—Because no arbitrary rate can be fixed for all roads in this State that will do justice to each, the evidence showing that a charge which would afford a fair profit to a road in the Santa Clara or Alameda valleys would be ruinous to a road between Sacramento and the line dividing California and Nevada.

Fifth—Because the rates of freight now allowed on roads in Eastern States for short distances, where the quantity transported is one hun-

dred tons for each ton moved on the Central Pacific road, are from two to three times as great as is charged by roads in this State.

Sixth—Because in Europe, where labor is abundant and material cheap, the rates for passengers nearly equal the rates charged in this State, and yet the history of railroads there does not show that even with such rates, and the advantage of comparatively small expenses, their operation has been profitable.

Seventh—Because the rates charged on the roads in this State average less than the charges on roads in any other State, excepting Illinois; and the effect of the low rates allowed there has been to force a combination between the only three competing lines, viz: the Chicago and Northwestern, the Chicago, Burlington, and Quincy, and the Chicago, Rock Island, and Pacific Railroads, and to prevent the construction of any new lines. It should also be remembered in making a comparison with the railroad business of Illinois, that none of their roads have any material grade, and the houses along their main lines number as one hundred to one in a given distance.

Eighth—Because we believe any reduction from the present rates would impair the efficiency of roads already existing, and lessen the accommodation given to the public by compelling such roads to reduce their rate of speed, and to take off some of their trains, and will, by impairing the credit of railroad companies, lessen the value of their bonds and securities, and make any future railroad building in this State almost an impossibility.

Ninth—Because any reduction from present rates would compel the suspension of several short roads in different parts of the State, and inflict great injury on the people now served by such roads.

Tenth—Because your committee believes that if it were the design and interest of the Legislature to perpetuate in the hands of the companies now in existence all the carrying trade of the State of California, no more effectual method could be found than the passage of this bill.

Eleventh—If the subject of fares and freights is to be intelligently regulated by legislation, then there must be separate bills passed for each road, with tariffs so graded as to fix a compensatory rate for the business of each locality, care being had in establishing such rates, so that the people of the valleys shall not be compelled to assume the burdens which only pertain to transportation on mountain roads.

The foregoing being the views of your committee, they return the bill, and recommend that it be indefinitely postponed.

MACLAY, Chairman;
GWIN,
HUTCHINGS,
WILSON,
WING,
VAN NESS,
OULTON.

The Senate Committee met at seven o'clock P. M., March fifth, eighteen hundred and seventy-two, to consider Larkin's bill to reduce freights and fares on railroads. Senator Maclay presiding.

Present—Maclay, Wilson, Van Ness, Hutchings, Gwin, Wing, Oulton.

MR. LARKIN

Testified that the bill to reduce freights and fares which was now before the committee had reference to the railroads of this State outside of the Central Pacific road, the Central Pacific being a line under Congressional control; that the rate of seven cents per ton per mile was as much as the interests of this State will stand on the products of the State—say lumber, wood, etc.; at the same time he would not desire to compel the companies to carry for less than would make it a paying business for the roads. From what he had been informed in the matter, he considered that the interest of the State would not stand the present high charges. True, the rate on lumber was moderate, but that only comprised a very small portion of the trade of the State.

By Mr. Van Ness.

Question—What are the present charges of the railroad?

Answer.—It varies according to the freight and according to the distance, I believe, from two cents to ten and twelve cents; ten cents, I believe, is about as high as is charged on any road outside of the Central Pacific.

Q.—Do you think the maximum ought to be seven cents?

A.—I think the maximum should not be more than seven cents. The average freights on the roads here would probably range about two and one half to two and three fourth cents; that is, judging from the evidence that was produced two years ago when this question was raised, and I suppose it is not much different now. I do not think it exceeds this average; but I am quite sure that seven cents is as much as any productions of this State will stand for transportation. The main difficulty that has occurred in connection with the freighting business is this: that the company have discriminated against certain localities, charging freight unequally. For instance, they ship freight to Marysville, I believe, at two cents per ton per mile at the highest; whereas, for the same distance on other lines they charge four and four and a half. I consider it is the interest of the roads to carry freights similar distances on the different roads of California at the same prices.

By Mr. Hutchings.

Q.—If this reduction were made, would it make the figure as low as the rates you ask for in the bill to the place you speak of?

A.—The rates between here and Shingle Springs would be lower than the present rates, if they charged the proposed rates. As to passengers, until the first of January they charged ten cents for passengers per mile from here to Placerville, which comes to more than it costs to run a single passenger by stage. I was told by a man in Placerville that he proposed to haul all his goods by teams this Summer; that he was hauling freight both ways and could afford to haul it through, inasmuch as anyhow he has to haul it from Placerville to Shingle Springs—a distance of ten miles. He says it would pay him better for his teams to do the whole distance. I look upon these outside roads, although there might not be a large amount of business upon them, as parts of a system of roads—as feeders of the other lines. There is considerable produce that comes in from the road from Shingle Springs and Folsom,

and a large portion of it is shipped in San Francisco and to points east of here, thus making business for the other roads. Our interest demands that we shall have our freights and ship our produce for the same prices as parties doing a similar trade at other points to like distances, or at least to have such rates as will enable us to compete with other men in the same business. When the roads have been for a long time in the hands of this company, perhaps their own interest will prompt them to reduce the rates to correspond with other roads running in the State at the same altitude. They now run up our way at an altitude of fifteen hundred and will soon run further into the State to an altitude of some two thousand feet. If they will reduce the rates they will materially increase the quantity of freight and help our people very much if we are enabled to ship our fruits, wine, and produce and other articles as cheap as they can from other points at the same altitude.

By Mr. Wilson.

Q.—How long is that road?

A.—Forty-five miles. The road travels over a good deal of country, winding a good deal. It winds south into Amador County and runs south to Latrobe for the purpose of getting the business of Amador.

By Mr. Hutchings.

Q.—What is the elevation?

A.—At present it is some fifteen hundred feet to Shingle Springs. It has, until a short time ago, cost six dollars to Placerville, which the stage could run what passengers came over this road for three dollars, providing the road would continue at the present rates. If they put on a line of fast stages it would probably only make an hour's difference in the time. My feature in introducing this bill was particularly that the people of my county demand most earnestly for the reduction of the maximum rate. It is a hardship upon them; only a small portion of our county is benefited by the Central Pacific Railroad running through Placer County. I ask for the rate to be reduced to seven cents per ton per mile. The present rate is ten cents. There are some articles, such as lumber, that are charged very reasonable, but there are other articles, cheap freights, for which we pay say two and one half cents per ton per mile, in which we cannot compete with other places that get their material for half that we do. The companies would find that if they were to make the reduction the increased business of the road would more than make up the difference in the rates. Our goods come here and are shipped on from here by railroad or steamer to San Francisco or elsewhere. Here we come into connection with competing lines of travel. Their tariffs are low enough for us on all these lines. There has never been any complaint on these roads. We are only striving to obtain equal rights with other portions of this State for the moving of our wine, lumber, and other material that we have to ship to market. We have no feeling in the matter, only that where margins are high it is a maxim of business that the interest of the company is to reduce their charges.

Mr. Hutchings.

Q.—Is that the only road that overcharges?

A.—That is the road, I think, that charges as much, or more, probably,

than any other road. I am simply speaking of my personal knowledge of this road. I look on it that the business of the State cannot afford to pay more than the price I have named. I know that the freight business cannot, and it is decided that we only affect the outside roads by this bill—that is, roads outside of the Central Pacific. Their maximums should be very moderate; it is no more than just to the people. I do not propose to enter into a long discussion as to fares and freights. Whatever report the committee may make, I have my own convictions, upon which I shall vote. I have submitted the bill, and will accept such amendments to change the maximum rates as I think the interest of the State requires. I am satisfied that you (the committee) are perfectly competent to judge of the matter. I shall content myself simply with voting for the measure when it shall be returned by the committee. I introduced it more as a local measure, because I pledged myself to the people that I would introduce a bill of the kind, and it has been promised by members of the county to support a similar measure. I am a representative now, and propose to represent that people or resign. I do not know that I have anything further in particular to offer in the matter.

By Mr. Towne (by permission).

Q.—With reference to doors and blinds, are there any complaints of the rates upon them?

A.—I believe you have now reduced your rates on doors and blinds. I understand that you have now reduced the rate seven dollars and fifty cents from there to San Francisco.

Q.—What are the figures now?

A.—I do not know the exact figures. Johnson told me that you had reduced it seven dollars and fifty cents; and another man told me he could not afford to run his factories if he had to pay the high rates that were charged.

Q.—Was it not two cents per ton per mile for the last two years?

A.—He told me, as I informed you, that they took off seven dollars and fifty cents on the car load to San Francisco.

By Mr. Stanford (by permission).

Q.—What do you say the present charge is from Placerville to San Francisco?

A.—I believe you are only charging five dollars and fifty cents to San Francisco; it was six dollars for years.

Q.—Now, what proportion of that is stage fare?

A.—The stage fare is one dollar and fifty cents, so that you get four dollars now.

Q.—What is the distance from Shingle Springs to Placerville?

A.—It is ten miles.

Q.—The railroad does not run to Placerville, does it?

A.—No, they go between there and Shingle by teams.

Q.—Now, taking the price of teams and freight around Shingle, do you think they can afford to haul cheaper than the railroad can?

A.—I know that Mandaker (2) Wilcot and Brown said to me some two weeks ago that they had to haul down freight every trip, and they could afford to haul their goods by team. They have their own teams and stock, and so it is easy to take the freight down. I think the road

could make a good deal more if they charged less. There is a good deal of freight that has been hauled over the mountains that would be shipped over the road if it had not been for the expense.

Q.—Does the railroad charge more than the road to Marysville?

A.—I understand so.

Q.—They are distinct roads, are they not?

A.—They are different roads.

Q.—With different grades?

A.—Different grades.

Q.—And roads doing a different amount of business?

A.—Yes; but you can haul freight as easily from Shingle Springs as you can from Marysville. You have your train there, and you can certainly haul freight from there.

Q.—Do you not think that in regulating the fare and freight you should take into consideration the amount of business that the road does?

A.—To a certain extent.

Q.—The amount of grades, curvatures, and the character of the business?

A.—Certainly.

Q.—The kind of freight?

A.—Yes. Still you have your train running, and you might just as well run the train full as empty.

Q.—Do you think the price of seven cents would pay for all business for all distances—say five miles, on the railroad?

A.—There is very little freight that is moved five miles.

Q.—There is freight moved five miles, and even less, on some roads. Now, can you move it for that figure and afford to handle it—to load and unload it?

A.—Well, you charge in addition for loading and unloading.

Q.—We have to load and unload freight when necesssary?

A.—Well, I know this, that teams are hauling wood right down beside your trains for ten miles out, and you might just as well have put it on your trains and haul it down. This has been done for years.

Q.—The farmer loads his goods, and he finds that he can better haul them to the city than to the railroad, and then pay for its transportation. Are you posted up in the cost of operating roads—that is, your own, or other roads—say the Sacramento Valley road?

A.—No, I am not; but the railroad business had better stop than compete with teams. You had better quit when you come doubling the price of our land, if you cannot compete with teams in hauling goods. Certainly it would be very little interest or inducement to the State to have railroads, unless they are cheap.

Q.—If the ox teams could move nearly all freight why did they stop?

A.—They stopped when you came there because they thought they could do better. I know that stages ran on that road in eighteen hundred and fifty-five. The highest price since then was five dollars; but when there was opposition it was three dollars. I have ridden through many a time from Diamond Hill for two or three dollars, because there was a competing line that reduced their fares.

Q.—Do you know the number of passengers that are conveyed over that road daily.

A.—No; I do not know the exact number. I should think twenty-five each way per day.

Q.—Do you know the amount of freight?

A.—I do not; they have a large amount of freight during a portion of the year.

Q.—Do you know the amount of freight yearly?

A.—I do not; there is considerable of the freight that goes to Auburn. There is a portion of the county extending up the divide on the south side of the creek that comes to Shingle Springs.

Q.—What proportion of the freight carried pays the rate as high as seven cents?

A.—I have heard often that for the hauling of wood you are charging twenty-three or twenty-four dollars at the same points as you are shipping lumber from for fifteen or sixteen dollars per car. I do not know the exact amount, but I think the majority of the freight exceeds seven cents.

Q.—Would you bring all the freights as low as the minimum rate for any one article?

A.—I think that your freights should be arranged so as to allow a margin so that a man cutting wood and hauling it should make a portion of profit above his work.

Q.—Do you think it is objectionable for a road to charge a very low rate for some particular article?

A.—No, unless they discriminate against any other business.

Q.—Do you think that because they charge a very low rate for the transportation of certain classes of freight that all other freight should go down to that figure?

A.—No; I think the theory of shipping freight is that you should simply encourage fair competition.

Q.—Would you compel the railroad company to ship at low rates, even if they are losing money by the transportation?

A.—No; I do not desire them to lose money by the transportation; I think if they would run at fair prices they could increase their business; I would run it so as to give the people an opportunity of competing with other people.

Q.—You think you would run them different from the way in which they are run now?

A.—I do not think that railroads were organized except for the public interest; they are supposed to be public corporations.

Q.—I think I understand you to say that by charging different rates from what they now charge it would pay them better?

A.—I believe it would.

Q.—Do you think it possible to fix an arbitrary rate for all roads, without reference to the amount of their business, their grades, curves, cost of maintaining them, and for all classes of goods that would do justice to the community or the railroad?

A.—I think the rate of seven cents is the maximum which the produce, lumber, etc., of California can pay.

Q.—Do you think you could ship a car load of brooms at that rate?

A.—I think you might ship them in connection with other freights. There is hardly a road in the State, except over the mountains, that ever ships a car load of brooms.

Q.—Or a car load of nitric acid?

A.—No; but I do not think you ship more than one car load of nitric acid a year into our county.

Q.—Do you think that horses or furniture could be shipped at that rate?

A.—No, I do not; but these are so trifling as compared to the business of the county that I do not take them into account.

Q.—Would you take a buggy weighing five hundred pounds at the same rate as five hundred pounds of sheet iron?

A.—No, I would not; buggies are things that seldom go over the road; I am speaking of local interests; I think that road is charging more than it should charge for the interest of our people; I am speaking of our side of the question.

Q.—Do you think the railroad is entitled, if it can, to earn a fair return on its investment?

A.—On the actual investment of the road, certainly.

Q.—Do you consider it would be honest towards the Sacramento Valley Railroad to reduce the rates so low that the company could not pay the interest on their bonds?

A.—I do not think the road at present has a great many bonds out.

Q.—Suppose there were bonds out of that road, would it be fair to reduce the rates, although the road could not pay the interest on its bonds?

A.—It depends whether they were treated as we were in El Dorado County, where they obtained the bonds and never completed the road. In that case I would be perfectly willing.

Mr. Stanford (*soto voce*)—That is not so.

Q.—As a general principle of bondholders, would you lend money if the road was run so low that they could not pay their interest?

A.—No; but I do not think there is much danger of their going under it.

Q.—Are you acquainted, generally, with the prices charged on the various roads in this State?

A.—I told you I was not; that I introduced this bill with reference to the local interests of the people.

Q.—Not with reference to other roads?

A.—No; I think the rates that road charges are higher than any other road I know of. I do not think it would affect the other roads materially, because the other roads are lower than is asked for by the provision for this maximum.

Q.—Do you think that seven cents per mile will pay for handling and transporting goods for short distances—say five or ten miles?

A.—I do not understand that there is anything in the Act that requires you to handle goods.

Q.—Do you not know that common carriers are compelled to receive load, and forward goods?

A.—No; I am not acquainted with that.

By permission of the committee,

LELAND STANFORD

Made the following statement: I am President of the Sacramento Valley Railroad. For the last two years that road has run behind. In the year eighteen hundred and seventy it fell short of earning sufficient to pay its expenses and the interest on its bonds twenty-seven thousand three hundred and one dollars and ninety-nine cents. In eighteen hundred and seventy-one its profits over and above expenses and paying the interest on its bonded indebtedness were two hundred and five dollars and ninety-three cents. The receipts in full in both of these years were about the

same; but finding that the road was not able to pay its expenses we reduced the accommodations that we were before giving to the public, and in that way we were able to bring down the expenses to meet our income. The people of El Dorado County pay to that road for freights and fares about fifty thousand dollars per year (my impression is that it is much below that); that is the entire amount they pay out, and the probabilities are that not one tenth part of the goods and merchandise on that road pays the maximum rates. It is necessary for the road to discriminate, and to move anything that it can move if it will pay the general expenses consequent on its movement, sooner than not move it at all, and to push on and develop the business of that locality. The Sacramento Valley and Placerville Railroad, running from Folsom to Shingle Springs, was never able to pay its expenses, let alone the interest on its bonds of indebtedness. The road was sold under execution, and the purchasers afterwards sold it for about what the iron was worth as old iron. It is now run in connection with the Sacramento Valley Railroad, and is used somewhat as a feeder to that road; but by itself it does not pay. The bonded indebtedness on the road from Sacramento to Folsom is now about five hundred and fifty thousand dollars; I think that is the exact amount. Under the rates adopted by Mr. Larkin, that road would have to suspend; it could not maintain itself; whatever advantage it may be to the people, as they do now use it, would be lost to them. The bondholders would have to suffer a loss, and I think it would be very unfair to them to reduce the rates so that the road could not pay them. I also think it would be very wrong to the people as well as to the company, to reduce the rates so that they might not have the accommodation. The road carries passengers forty-eight miles for four dollars; and at Placerville, for ten miles they charge one dollar and a half by the stage. It is possible that Mr. Larkin might run a stage line alongside the line of railroad with more satisfaction to the public than the railroad gives, but yet they do not do it; still they are free to do it; the railroad company would not complain, but they cannot afford to do the business at lower rates than they now charge. Seven cents per ton per mile would not pay for many kinds of goods, nor even fifteen cents, and there is no railroad in the United States, outside of California, that is carrying goods so low as fifteen cents per ton per mile for all kinds of goods and all distances. Generally the other States of the Union do not regulate freights and fares at all; and even those that do, with a single exception, allow a higher rate for some distances and some classes of goods than is allowed by the present law of this State.

If this bill were to become a law it would put a stop to the Copperopolis Railroad, and the California Pacific Railroad. Mr. Binney stated that his road, from Marysville to Oroville, would suspend. I think the Napa Valley road would. Mr. Wilson knows what would become of the road in his county. Not only this, but you will stop the construction of a road—the railroads now being built, in a large measure, on credit, people will not take their bonds if they know that the roads are not paying anything. The population of this State is sparse, the business of the roads necessarily light, and excepting they can charge prices commensurate with the services performed, they cannot do business at all. Take freight, such as a boiler; it is costly to load and unload, and difficult to handle generally. It could not be transported on these roads; although the shipper might be willing to pay a price

that the carrier would be willing to take it for, yet he is prohibited from making an agreement that would be agreeable to the shipper as well as to the carrier. The railroads in this State are being developed to-day faster than the population and business of the country would warrant, for the reason that they are substantially under one management. They operate together and at less expenses than they could possibly be operated under the management of separate companies. The railroad, for instance, from Gilroy to Watsonville, in connection with the road from San Francisco to Gilroy, is made to pay because the same engines and the same force can operate it; the train from San Francisco to Gilroy, a distance of eighty miles, going right through to Watsonville, the additional expense is light. If that road from Gilroy to Watsonville was by itself, it would not pay. The fact is, as is shown by comparative statements, that the business of the State of California is being done over its railroads at lower rates than the average freights which are conveyed over first class railroads in the Eastern States. (The witness here offered the report and testimony taken before the committee of the Assembly on Luttrell's and Freeman's bills for the reduction of freights and fares, in evidence).

It is a fact that the Constitution of this State has reserved the right to the Legislature to regulate the general corporation law. At the same time, I think it is a matter of good faith on the part of the people of this State that they shall not reduce the rates so low that the capital invested shall not pay a fair return; and the people abroad who took the bonds, in Germany, where most of the bonds are held, might very justly think that they were treated in bad faith if the rates were so reduced that the railroad companies could not pay. It might not be swindling, but it would be depriving the people of that fair return from their capital which they are entitled to.

(Read comparative statements from Assembly Committee report).

The point of particular importance in regulating fares and freights is the amount of business done per mile, and the cost of operating the roads.

I would particularly call your attention to the New York and Flushing Railroad. That is a short line (eight miles long), running out of New York, and doing an immense business. They charge at the rate of two and a half cents per mile. Now, from San Francisco to San Antonio the Central Pacific charges at the rate of one and a half cents per mile. A large portion of the passengers go still lower, commuting for three dollars per month.

The road to Placerville draws a good deal of business from Amador County. The average number of passengers carried each way on the road between Folsom and Shingle Springs is a fraction over ten each day.

By Mr. Hutchings.

Q.—Would the lowering of these rates affect our rates to Marysville?

A.—No, I think they would not. It is true that the railroad company would be forced to strive to make up their income in some other manner. The roads are over different grades. The grades to Placerville are high, and taking the rates in proportion to the service done they are cheaper than the rates are to Marysville. Moreover, the business that they do that would be affected by these rates probably is not more than an eighth part of the business that is done, for seven eighths of it is done at lower rates than this bill provides for.

Still, there are classes of goods that require a much higher rate to pay for their handling. It seems to me that these people want the valleys to pay for the mountains, regardless of the construction of railroads in their mountainous counties; for it is clear that if a railroad cannot earn enough to pay for itself, it will not be built. This amounts to a denial of the other mountainous counties of the State having railroads at all, although the people might be glad to pay a price that would justify the construction of the road. The whole railroad interest of the State, not only of the roads that now exist, but of the proposed roads, and the credit and good faith of the State, would be sacrificed in order to benefit the people of the Counties of Placer, El Dorado, and Nevada, the sum of which, in the whole, would not exceed thirty thousand dollars. The whole amount paid by these three counties for railroad services is less than two hundred and fifty thousand dollars, and of that seven eighths is for the freight business, at less rates than those contemplated in this bill of Mr. Larkin's. We move some classes of freight for a cent per ton per mile; some even lower than that, and yet on some freights fifteen cents per ton does not pay us. The policy of the company is to move all freights at any cost, providing it cannot afford to pay more than will meet the expenses of transporting it.

By Mr. Hutchings.

Q.—What is your charge from San Francisco to Marysville?

A.—Three cents per ton per mile; almost six dollars per ton for first class goods; for flour and grain, two and a half cents per ton per mile; and to Red Bluff, at two cents per ton per mile. From Tehama we charge six dollars. I would inform the committee that we are expending in Placer County above seven hundred thousand dollars. In eighteen hundred and seventy we paid forty-three thousand dollars taxes in that county; we built schools all along the line of the road; we expended in the construction of the road in that county about seventeen millions of dollars; we really sustained the county, and kept it from being as poor as other mining counties are, and yet they complain. They and the County of Placer do not pay any high rates till they reach Colfax, and it is only when we get up into the mountains, on certain classes of goods. The County of Placer took two hundred and fifty thousand dollars in stock, and gave us that amount of their bonds. We sold them for sixty-eight cents, and when the county came to sell its stock it sold it for par. We paid more taxes in that county in eighteen hundred and seventy than that county paid us altogether for freight.

The committee here adjourned to reassemble upon the call of the Chairman.

REPORT OF SPECIAL COMMITTEE

IN RELATION TO

Granting Women Political Equality.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

MR. SPEAKER:

The special committee to which was referred the petition of Honorable Leland Stanford, Honorable B. F. Washington, and over five thousand men and women, citizens of the State of California, asking for the adoption and submission to the people an amendment of the Constitution by which the women of California will be placed upon a political equality with men; and further, that the laws be so amended that the personal and property rights of the wife shall be the same as those of her husband, have had the same under consideration, given the subject considerable attention, and ask leave to submit the following report:

As the petition embraces two separate and distinct propositions, the first of which calls for an amendment to the Constitution of the State which will require years to crystalize it into authoritative law, while the other, being within the province of ordinary legislation, can be granted without delay, the committee proposes to examine them separately. The principles of woman suffrage have already a strong hold on the public mind, are rapidly growing into general favor, and are charged either with perils or blessings to the State too important to be treated with indifference, ridicule, or as a matter of trifling consequence.

History proclaims it as a general fact, that all great reformatory movements which boldly demand an enlargement of the rights of a proscribed class, have been invariably at first acknowledged with silent scorn, followed with ridicule, then with opposition of greater or less severity, till the hour of triumph. The history of the woman suffrage reform thus far forms no exception to this rule.

Many of those of the timid and conservative wing of society, who are satisfied with present usages and institutions, and who regard custom and tradition in the light of authority and right, have on this question given wings to their imaginations. They have drawn frightful pictures of ruin and desolation which must inevitably succeed the triumph of this question. It will, they confidently assert, work the ruin of woman's womanly instincts and character; it will destroy the home, and leave the children more friendless and less protected than orphans. These predict the overthrow of the Christian religion, the dissolving of our civilization, and a general reign of strife, disorder, and anarchy. But every great and good movement has had its prophets of evil.

At first view this subject may and doubtless does seem hedged about and environed with numerous obstacles—difficulties hard to be sur-

mounted and overcome; but, as mountain ranges in the distance, walling high up against the sky, and denying egress to the traveler, exhibit, as he nears them sags, then depressions and passes, and finally outlets, so to the inquirer many of the obstacles which at first appear unfavorable to the solution of the question diminish by investigation, and often disappear altogether, especially when approached by arguments based upon the great republican principles of equality, right, and justice, as proclaimed by the fathers of the republic, and examined in the light of the reformatory history of the American colonies and States.

Based, as is the Constitution of California, on the broad principles of the equal rights of man, as an intelligent, moral, and accountable being, the question under consideration expands beyond the rights of woman exclusively, and widens out into the comprehensive domain of humanity.

In the declaration of rights in section one, Article I, of the Constitution of California, it is declared that—

"All men are by nature free and independent, and have certain inalienable rights, among which are those of enjoying and defending life and liberty; acquiring, possessing, and protecting property; and pursuing and obtaining safety and happiness."

That the term "men" in the section above, was used in a generic sense, and referred to mankind in general, is specially evident by the employment of the word "people" in the next and following sections, to wit:

"All political power is inherent in the *people*. Government is instituted for the benefit, security, and protection of the *people;* and *they* have the right to alter or reform the same, whenever the public good may require."

That these declarations embrace woman in their comprehensive grasp alike with man, no reasonable person will question for one moment, who has given any consideration whatever to this branch of the subject. Neither will any traverse the proposition that the insertion of the word "male" in section one, of Article II, of the Constitution, touching the qualification of electors, and thereby excluding woman from the exercise of voice and vote in the affairs of State, is directly in the teeth of the foregoing "declaration of rights," which, in different language, proclaims man's "inalienable right to life, liberty, and the pursuit of happiness," as set forth by the revolutionary statesmen in the Declaration of American Independence.

The authority to govern the people is derived from two different and opposite sources. The despot claims that his authority to govern his subjects is derived from God, the Creator and Ruler of mankind, who has an indisputable right to show his authority with whom he may please. This style of government is designated, "ruling by divine right." In a republican government, the people recognizing a common right, inhering in each and every person for self protection and self government, proclaim that the natural rights of all men are self evident, equal, and unalterable. This is Democracy, or the "rule of the people." The source of authority of these two governing powers are essentially opposite and antagonistic; having nothing in common. Every deviation from the established principles of Democracy, as announced by the Fathers of the Republic, by excluding others from the inalienable right

of self government, partakes of the peculiar characteristics of the assumed "rule by divine right."

The committee has alluded to these fundamental principles in regard to the natural equality and rights of all men, not to censure or reflect upon those who framed and adopted the Constitution of California, but rather that it may be seen and understood that there is nothing in the proposed amendment which is either of a revolutionary character or in opposition to the spirit and genius of the Government, but rather, in so far as it shall augment the number of its constituency, by so far it will vitalize its spirit and subordinate the State to its general liberalizing aim and purpose. It may have been, and doubtless was, wise and eminently proper, at the time when the Constitution was formed and adopted, to except and exclude women from any participation in political affairs. Public attention had not been particularly called in that direction. It was sufficient, however, that the instrument contained the germ of woman's emancipation, which would expound and leap forth at any time, when properly invoked by the people. Then tradition and custom, usage and education, bigotry and prejudice—an inheritance of the past—had prescribed the active sphere of woman comparatively within very narrow links. Then the sentiment was general that her mind was framed on a scale so immeasurably below that of man, as to robustness, vigor, and strength, that she was incompetent to grasp, comprehend, and master the great problems of jurisprudence and education, industry and commerce, a right understanding and direction of which were then, as now, deemed necessary for the happiness and progress of the race. Man, therefore, as a class, in the direction of Government and of all the interests pertaining to the welfare of the human family, rule as by common consent, by "divine right." Woman, therefore, was excluded from an active participation in the affairs of Government, because of the prevailing idea that politics were unsuited to her interests, tastes, and habits of thought, and not from any desire or purpose of acting towards her unjustly or ungenerously. Then no Constitution could have received the approval of the people which practically recognized woman as the political equal of man, regarded as she was, by divine arrangement, man's ward, and he her counsellor and guide, protector, and guardian. But, *tempora mutanter!* Yes, the times have indeed changed, and the ideas of the people have changed with them. In dominating the affairs of the Republic, those old notions of sex superiority and class rule are daily becoming less potential.

The social and political revolutions of the past decade have forced home upon the minds of the American people the great questions touching the rights and immunities of individuals, in contradistinction to those of classes. The people have witnessed the emancipation of what was denominated an inferior race, to the extent of four millions of men and women, from a condition of slavery the most abject and degrading known to history, not only without endangering the peace of the Republic, but actually imparting to it both strength and stability. The Nation has gone further; it has invested eight hundred thousand of those ignorant and degraded freedmen with all the rights and immunities of citizens, accepted them as equal partners in the business of framing, interpreting, and executing the laws for the government of the people of the United States. Now, this class has its representatives on the floor of the Federal Congress, in the very Capital of the Nation, in which a few years since these people were driven and lashed, coffled and penned, auctioned and set off to the highest bidder, like so many

grazing quadrupeds. To these revolutionizing facts woman has not been an indifferent or disinterested spectator. Philanthropists and statesmen, politicians and divines, people of labor and leisure have studied earnestly and well the great lessons of liberty which the facts of this revolution present. It has stirred the spirit of liberty in the people to their inmost center and moved humanity down to its lowest depths of emotion and thought. If the negro, whose destiny and sphere she had been taught was that of slavery, can rise by his own exertions to positions of honor and trust, woman feels that she can do the same thing. These facts conspire to render her impatient and restless, confined as she is within the narrow limits which usage has assigned her. The employments and diminished compensation that once satisfied her ambition can do so no longer. She demands a larger field for labor and usefulness, for the play of her powers and the gratification of her ambition.

Formerly, when mothers sent out their inexperienced sons into the world to learn a trade or acquire an education, to study a profession or enter into business, they noted with trembling emotions the numerous temptations to intemperance and crime that everywhere beset them, and reconciled themselves to the trying condition of affairs on the general and prevailing idea that such things must be, or man, who had undisputed control of public affairs, would have lessened their debasing influence or removed them altogether. But such is not the condition of things now. Many women have outgrown those views. They honestly believe that if they were allowed the exercise of the elective franchise they could, by a judicious and wise selection of officers, accomplish much, not only to improve the condition of woman, but also to diminish temptation and lessen crime.

In this connection it may not be out of place to note the historic fact that the race, in its tardy journey westward from its eastern home, has invariably and everywhere exhibited its greatest intelligence and culture, refinement and progress, in those nations in which the social and civil rights of woman approached nearest to those of man. Her ascertained standing in any nation is now generally admitted to be a key to a knowledge of the character of the civilization of that nation.

In those countries where women are veiled and excluded from social intercourse, from public conveyances and gatherings, any demand for so much of an enlargement of their rights as to permit them to appear unveiled or unattended in public places, either for instruction, business, or pleasure, would be considered highly unbecoming and disgraceful, and would arouse displeasure and strong opposition. The reason is obvious. The people of those countries are not controlled as are those of a republic by the broad principles of national right, justice, and equality of mankind as to political rights and self-government, but rather by the narrow prejudices which spring from tradition, custom, and education.

In those States where authority and power are the inheritance of the few, and from which the privileges of the many are derived, the few rule and the many obey. The State has no expanding constitution to adapt itself from time to time to the advancing condition of its subjects. Its authority, resting in an individual, is changed only by his royal pleasure. When, therefore, oppression becomes unbearable, and bloody revolutions transpire, man, belonging to the muscular, fighting, and demanding wing of society, obtains concessions to his class; while woman, who is less muscular and exacting, more yielding and passive, patient and forgiving, is allowed to remain in her subject condition till

the sense of right and justice shall triumph over narrow selfishness and brute force.

In those nations in which right is measured by the law of might, physical force, the dominating element, and war—practically the normal condition—the nature, relations, and tastes of woman necessarily disqualify her for action or efficient participation in scenes of physical strife and bloodshed. It is a state of affairs in which she can make no just claim to equality. But in a government of written laws, based upon the natural equality and rights of mankind, be the same rich or poor, learned or ignorant, physically strong or weak, in which the rights of all classes are vindicated by the strong arm of the State in the interests of equality, right, and justice, may not women rightfully claim to be man's equal and peer? In a republican government, therefore, may not woman, who is in the possession of every mental and moral, social and governing faculty possessed by man, be admirably fitted by virtue of her refining and humanizing nature, to assist to infuse into the laws and their administration those feminine qualities which have contributed so largely to modify and neutralize the asperities in those departments of society in which she has been permitted to mingle and actively participate? Has she not as much to gain by good government as man? In fact, what interest has he for the maintenance of public order and harmony that is not possessed by her in an equal degree? Has the father a more inflexible, continuous, and abiding affection or self-sacrificing devotion to the best interests of his children than has the mother? If she be capable of rearing her offspring to the age of manhood and womanhood, instilling into their minds virtuous principles, and placing before them worthy examples to direct and guide them through life, why may she not assist to frame laws that will be favorable to protect and shield them from the snares and besetting temptations to which they will be exposed when they shall pass out from and beyond the saving reach of her personal influence? Both in Europe and the United States, for more than a quarter of a century, woman has been quietly working herself into new, varied, and important departments of business and public life.

In England she has employed her newly acquired right to vote for municipal officers with such marked discretion and wisdom that her numerous friends, both in and out of Parliament, urge that as a guarantee that the cause of public morality and virtue would be greatly subserved by investing her with all the political rights and privileges awarded to man.

In many of the States and Territories of the Federal Union woman has been the recipient of many political concessions, varied in character and importance. In one State she may vote for School Trustees; in another she is eligible to the office of Director of Public Schools; and in another to that of School Superintendent. One State allows her a seat on the Board of Overseers of the Poor and of State Charities; and another on the Board of Prison Inspectors.

The numerous Post Offices under women's management have been conducted with such promptness, efficiency, and integrity that her capacity to properly discharge the duties of Postmaster is no longer a problem of doubtful solution. In the various clerical departments under Governernment, both local, State, and National, in which she has been permitted to labor, she has been invariably awarded with unstinted praise for the precision and neatness of her work. The United States Treasury Department, at Washington, has employed several hundred women for many years, and General Spinner attributes much of his success in the

Treasury Bureau to the industry, faithfulness, and integrity of the women Clerks under his direction. In the General Post Office Department, at Washington, General Burt states that not one dollar has ever been embezzled by the women Clerks. For two years the Territory of Wyoming has conceded to woman the right to vote, sit on juries, and hold office. The written statements of Judges Hoar and Kingman, of the Supreme Court, and of Governor Campbell, all of that Territory, commend in glowing terms her discreet and judicious deportment in the discharge of her political responsibilities, and of the moral, healthy, and humanizing influence generally which she exercised over the politics within its territorial jurisdiction.

The Territorial Government of Utah made the experiment of conceding the ballot to women. Recently the convention at Salt Lake City, composed of Mormons and Gentiles, to frame a Constitution for the proposed State of Deseret, conferred in clear and unequivocal language the same rights upon woman as man, to vote and hold office. In this State, in joint stock companies a woman stockholder possesses all the rights and privileges, including that of voting, which are awarded to man.

Facts indisputable sustain the proposition that in whatever department of society in which woman has been allowed actively to participate, whether as subordinate, equal, or director, whether in the home or the church, in education or art, labor or business, she has always and everywhere performed her duty faithfully and well. Industry and frugality, promptness and fidelity, neatness and order, quiet and refinement, are characteristics peculiar to woman.

It is an encouraging, hopeful, and inspiring fact that woman, the mother and nurse, the moulder and educator of the race through its protracted period of adolescence, is specially and richly endowed by nature with the maternal characteristics of care and watchfulness, kindness and charity, sympathy and patience, with quick intuitions and a clear perception of character, coupled with approximately correct knowledge of the best means to be employed to secure certain desirable ends—most excellent and indispensable characteristics for successful law makers and public rulers.

Has not woman, therefore, in an eminent degree the peculiar characteristics for a successful ruler in the empire of equality, right, and justice? Does not the mother's peaceful and quiet reign over the domain of the family, where numerous cares, conflicting desires, and hostile interests conspire to perplex and annoy, indicate her possession of this capacity in an extraordinary degree? Does not the history of her influence in revolutionizing the discipline and government of schools, displacing, to an almost unlimited extent, force and cruel punishments, by an appeal to the reason and the sense of kindness and justice on the part of the pupil, eloquently proclaim the superiority of woman's governing capacity? Do not the quiet and order, propriety and decency which prevail in shops and markets, theaters and operas, steamboats and railroad cars, Post Offices, and other public places where woman is allowed free access, and especially when contrasted with the profanity and obscenity, rowdyism and violence which characterize polling booths—those public places only from which woman is by custom and law excluded—clearly indicate her refining and governing power? If invested with the ballot, would she not be likely to carry into the arena of politics those quiet and peaceful, refining and purifying influences which she has exerted upon other institutions? Is it not more than probable that her presence at the polls would modify and ultimately banish the

rowdy characteristics of political elections? Would not woman's presence in the political caucus, conventions, and legislative halls be a guarantee of quiet and order, decency and propriety? Many eminent philanthropists and statesmen, jurists and political economists, authors and divines, publically proclaim it as their deliberate conviction that man, unaided by woman's counsel and coöperation in the State, will be unable to further elevate the standard of civilization; that the State would gain more than woman by her enfranchisement.

This question of woman suffrage widely pervades the public mind, and is pressing itself hard for State and national recognition. It has already occupied the serious attention of Congress, and the Legislatures of nearly half the States and Territories of the United States have been more or less agitated by its consideration.

This Legislature is asked to adopt, and submit to the people, a constitutional amendment which will make woman the political equal to man. This request, from so large a body, indicates that the feeling in California is widespread and general on this subject. The request is both proper and reasonable. The Constitution provides the means for expanding itself to meet the growing demands of progress. If the people desire this change, the committee can discover no just reason why their wish should not be respected, as it is a wish that can be granted without subjecting the State either to much trouble or expense. The amendment, if adopted at this session, cannot become operative for several years.

The committee now invite attention to the consideration of the second proposition embraced in the petition under consideration, to wit: The enactment of a law that will make the personal and property rights of the wife equal with those of her husband. The ordinary limits of a report will not allow the committee to pass in critical review the character and influence of the various laws which in their operations work severe hardships upon wives. Passing over most of those, the committee invite particular attention to the very great hardships which the existing probate laws work upon widows and orphans. As the law now stands, the family estate survives the death of the wife. The husband is allowed to proceed with his business and domestic affairs as though no great calamity had befallen the family. The law allows him every facility to provide for its surviving members, and to retain the children under the paternal roof. But on the death of the husband the family estate, ceasing to exist, is dissolved by the operation of law. The law practically presumes that the widow, however experienced and skilled she may be in business, or qualified to manage, she is practically considered incompetent to carry on or wind up the estate of her deceased husband. Therefore, on his demise, just at the time of her greatest sorrow, when all the resources of her depressed mind should be free to consider the real condition of affairs, and to adjust matters with a view to present wants and the necessaries of the future, the estate falling into probate, in steps the numerous officers which the laws provide for, inventorying, appraising, dividing, setting off, and selling the estate, consuming, by expensive fees, delays, and general derangement, if honestly, capably, and efficiently administered, a large per cent of a small estate, and entirely ruined in its producing and supporting capacity, is consumed in the settlement, but which, if the widow had been allowed to manage, would in ordinary cases afforded herself and orphan children a competence. Often, by tardy, indiscreet, and dishonest management,

hopeful estates afford but little or nothing to minister to the necessities of those whom the probate laws were designed to protect.

The great hardships and cruelties which this system imposes are familiar to those judicial and other public officers whose duties have been in the line of the probate department. The great injuries it inflicts are matters of almost daily observation and experience. But for custom, which has familiarized the public mind with the administration of this system of wrong and great injustice against a helpless class, which the public cherish with tender solicitude, there would be a general outcry against its continuance. The object of the law in winding up the estate on the death of the husband is to protect the widow and particularly guard the interests of the children. It had its origin in a noble and charitable sentiment. There was a time when it did good service, both for the widow and orphans. But times have changed. The law which was once necessary has not only survived its usefulness, but is now a lever of oppression, and often of robbery. It is objected to allowing the widow to succeed to the estate of her deceased husband, on the ground that he earned it by virtue of his own personal foresight, enterprise, perseverence, and business energy, and that therefore it belongs to him, or at least that portion of the estate which the law sets off to the children; that as this portion is designed especially for their care and education, it would be an act of great injustice to leave it in the hands of the wife, particularly if she be deficient in business tact and experience. As this is one of the most plausible and forcible objections that has been and probably that can be urged against the proposed change, the committee will devote a few moments to its consideration.

It will not be denied that the anticipated result of marriage is children—the raising of a family. At the time of marriage the wife is supposed to be the peer socially of the husband; each have duties. By general consent and in conformity with the usages of society, there was, as by a mutual understanding, an agreement for a division of labor for the advantage of each. Being familiar with business, the husband assumes the control of out-of-door matters; the wife, educated to indoor labors, takes charge of the house, the home, and family. While the husband may prosper in business and accumulate wealth, the wife may at the same time perform equally well her duties in a more narrow, but not less important, sphere. She may, by her skill and industry, gratify the family pride by the embellishment of the home. In the cultivation of her mind, the refinement of her taste, and the protection of her health he not only shares the general improvement, while she is in condition to bear him well formed and beautiful and healthy children, and to intelligently surround them with improving and refining conditions that will tend to give them a noble direction through life, and thus honoring his name, transmit it to the future untarnished.

Unless money is more valuable than the mind of man, and coin than character, the business qualifications of the husband may be fairly and equitably offset by the home duties of the wife. If the accumulated estate rightfully belongs to the husband may not the children justly belong to the mother, who bore and has nursed them through years of wearisome toil unknown to those in the line of ordinary business directions? If either partner of the matrimonial firm fails to perform a full share of the labor assumed or assigned that is a misfortune, but it should not be allowed to vitiate the personal or property rights of either partner.

It is often objected that, the wife being unacquainted with the routine of ordinary business matters, she is therefore so disqualified as to be entirely unfitted to assume the management of the business of her deceased husband. .

While there is very often more or less of force and truth in this statement, the evils are generally more seeming than real. As a general rule wives have large experience in the direction of complicate interests—those, for instance, of farmers. These duties educate them in system and order, management and authority. They constitute the groundwork or base of business success. These once learned, it is an easy matter to transfer them from one system of arrangements or business to another. The skill necessary to manage a large household with success would be useful when directed to the control of any ordinary business. If, however, husbands knew that their widows would succeed to their business, this would necessarily operate as a powerful stimulus to induce them to instruct their wives not only in business matters generally, but also to enlighten them as to their own pecuniary condition and manner of conducting their affairs. It would stimulate wives to fit themselves for the proper discharge of the new responsibilities and duties which the changed order of things would impose upon them. But it is notorious that woman has a natural tact for business. They are great contrivers and economists. Their watchful care and industrious habits are proverbial. They are educated to habits of saving from their youth, and are taught by practical experience to make the most of the limited means at their disposal.

Facts are numerous showing that wives during years of wedded life experienced great deprivations and hardships, arising from the inability of their husbands to provide for their wants, but who, on becoming widows, supported themselves, educated their orphan children, and accumulated property. Instances are numerous where wives, when allowed the opportunity, have rescued and brought out incumbered estates, involved by the unfortunate speculations or business incapacities of their husbands. The testimony of Chief Justice John Marshall and other eminent jurists familiar with the subject is eloquent, abundant, and conclusive in vindication of the natural tact and business capacity, economy, and perseverance of woman. Nature has richly endowed the mother with the natural affection, the mental and business resources, courage, and skill necessary for the protection of her orphan children. Who that lives, when deprived of a father's care and protection, has so great and continued, abiding and untiring interests in the proper education, training, and the future of her children as the mother who has borne and nursed them? Who is prepared to toil harder, or to economize more rigidly, or willing to make greater sacrifices for their good than she? The care and culture of children is a sacred trust committed to the mother which she is willing, nay more, she is anxious to assume with all the trying responsibilities which that trust imposes.

The committee, therefore, in conclusion, are of the opinion that the family estate should survive the death of the husband as it now does the decease of the wife, and accordingly report the following bills and respectfully recommend their passage.

J. M. DAYS,
J. N. TURNER,
C. G. W. FRENCH,
For the Committee.

REPORT OF SENATE COMMITTEE

ON

STATE HOSPITALS

REGARDING THE

DEAF, DUMB, AND BLIND ASYLUM.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

Mr. President:

The Committee on State Hospitals have the honor to report that in accordance with their duties, they, in connection with the Assembly Committee, visited the Deaf, Dumb, and Blind Asylum, located at Oakland, on the 10th ultimo.

After a careful examination of the building, the education of the pupils, the workshops and grounds, the account of expenditures, and the general advancement of those whom to State aid appeal in their affliction, we have found nothing to condemn and all to praise.

The building, erected in the most substantial manner, at a cost of one hundred and seventy-three thousand dollars, is in a perfect state of preservation; the location, in view, is of the most pleasing nature. As far as discernible the system in operation in education and conduct of the establishment reflects credit on both the officers of the institute and pupils.

In the institute reside one hundred and two pupils—sixty-eight deaf and dumb, of which number forty are males and twenty-eight females. In the blind department are to be found thirty-four pupils, of which twenty-one are males and thirteen females.

In the blind department, the first visited, the general order of neatness was remarkable. The pupils exhibited a remarkable degree of proficiency for persons so afflicted. In their lessons on raised letters and types an acuteness was shown that if continued will soon allow many of the pupils, though deprived of the most important sense, to go into the world without further charge to the State or trouble to their friends. The younger pupils in both departments were noticed by your committee as being quick in their perceptions and readily instructed in those arts that will allow them in life to gain a livelihood.

The musical department of the blind portion of the asylum is a source of great pleasure to the pupils. Their voices are heard in unison, and as they stated to the committee, it is one of the sources of delight to them that they, in God's providence, though afflicted by the loss of sight, are allowed to sing his praise.

The deaf and dumb pupils, though under the same care and supervision, and educated in a different portion of the establishment, are under the same roof. These pupils having the use of their sight, though not able to articulate or hear, are remarkably quick in their perceptions,

and give answers by signs and writings, and solve problems with a quickness that shows that it has been to their best interest to have had the privilege to receive the bounty of the State in the shape of an education that they will never forget, and will and does prepare them for the battle of life.

Your committee visited the workshops devoted to the instruction of the deaf and dumb in mechanical arts. Though small in space, the establishment in neatness and the products of the pupils will compare favorably with other establishments conducted by those who employ all the senses.

In the shoe department work of a fine class was exhibited by the pupils with a pride that was evident that they had a full knowledge of the necessity of becoming proficient in their particular branch of trade.

The same may be said of the cabinet department. And in this connection we may state that on the dismissal of the pupils from their studies those able to work eagerly sought the workshops.

The books of the establishment were thoroughly examined, found correct, and kept in a business manner.

The estimate for the expenses for maintenance of the institute we find will be thirty-six thousand dollars per annum, or seventy-two thousand dollars for the two fiscal years ending June thirtieth, eighteen hundred and seventy-four. The amount named is based upon the estimate that before the close of the last date named one hundred and twenty-five pupils will be the recipients of the advantages the institution affords. No sum is asked by the Directors for improvements or contingent expenses, as the grounds, as well as the buildings, are in perfect order. The sum asked for is in accordance with the necessary expenses of attendants, salary, and the proper support of the pupils, and we cheerfully recommend that it be allowed.

KEYS, Chairman.

REPORT

OF

ASSEMBLY COMMITTEE ON STATE HOSPITALS

IN REFERENCE TO THE

INSANE ASYLUM AT STOCKTON.

ESTIMATE.

Support for the Asylum for the next two years, at $200,000 per year, which includes support of patients, attendants' salary, and in fact all expenses of the establishment, independent of improvements required	$400,000 00
Two new boilers for laundry	1,800 00
Board fence twelve feet high to encircle the entire grounds to prevent escapes	6,280 00
New floors in the center and north wings of the male department	2,100 00
Grading and graveling walks and streets bounding on the State property	5,850 00
One forty-four inch washer for laundry	600 00
One thirty-six inch centrifugal wringer for laundry	400 00
One mangle iron, complete, for laundry	600 00
Total	$417,630 00

In making the estimate for maintenance your committee considered the increase that would, as past years show, naturally follow. At present the asylum contains one thousand and seventy-five persons, afflicted with all species of mania, who require constant attention. Before the close of the fiscal year of eighteen hundred and seventy-four, taking the past ten years as data, there will certainly be confined one thousand two hundred unfortunates to whom State bounty could not be more charitably or more appropriately distributed. Many of the inmates will remain a burden to the State until God in his wise providence removes them from this world. While we admit they are a serious charge to the State, yet as they in their affliction appeal to those who enjoy all the senses, the committee deemed it but proper and just to make such allowances for their proper care as to reflect credit on the people and their representatives as well as to make comfortable those who, though in their affliction are not aware of the generosity of the people, are made to understand that those in prosperity are not unmindful of their fellow beings in adversity, poverty, and misfortune.

After consultation, your committee agree to state that an immediate necessity exists for the construction of a branch asylum, to be located in some one of the bay counties, and adjacent or with quick and ready means of access to the City of San Francisco. It is not the desire of the committee to designate or to intimate the location of said branch institution, but simply to impress upon the representatives the necessity for such an establishment.

In the estimate furnished for maintenance and improvements the committee desire to state that it is positively necessary to erect fences and grade and gravel the walks and adjacent streets. The first prevents escapes, the latter allows easy mode of access to the institution.

The committee takes pleasure in recommending the allowance asked for, and desire to say that during their experience no charity has been found that appeals so earnestly to the feelings as that distributed to those whom reason has departed from.

W. W. STILLWAGON, Chairman.

MEMORIAL

OF THE

NATOMA WATER AND MINING COMPANY,

TO THE

COMMITTEES ON STATE PRISON

OF THE

SENATE AND ASSEMBLY OF THE STATE OF CALIFORNIA.

T. A. SPRINGER.....STATE PRINTER.

MEMORIAL.

To the Honorable Committees on State Prison of the Senate and Assembly of the State of California:

Your memorialists respectfully represent:

That the Legislature of this State in the year eighteen hundred and fifty-eight, by a nearly unanimous vote, enacted the law of that year authorizing the establishing of a branch State Prison (see Statutes 1858, pp. 259–61), which, it is believed, was in accordance with the sentiments of the people of the State.

At the last session a supplemental Act was passed, making it obligatory on the Board of State Prison Directors to make the selection and location of the site for the branch prison, and to cause the lands so selected to be conveyed to the State. (See Statutes 1867–68, pp. 627–8.)

In pursuance of said Acts the Board of State Prison Directors, in the month of June, 1868, made the selection and established the site for the branch prison on the south bank of the American River, in the eastern portion of Sacramento County, on lands belonging to the Natoma Water and Mining Company. This selection was made under the provision of the latter Act as "the place offering the greatest advantages for prison purposes." (See Act.) In relation to the provisions of the law and the selection of this site as the site offering the greatest advantages, your memorialists earnestly ask the attention of the committees to the report of General B. S. Alexander "on the merits of the proposed site of a Branch State Prison near Folsom, Cal.," and also to document entitled "Branch State Prison, Location, Advantages, etc.," copies of which are submitted with this memorial.

After the selection and location had been made by the unanimous act of the Board of State Prison Directors, a perfect title, with full warranty, of the premises so selected was conveyed to the State of California by your memorialists. The tract of land so conveyed embraces about three hundred acres of land, and had at that time been improved by opening and working some of the extensive quarries of granite situate thereon, and by the construction of a railroad of two miles in length, connecting it with the Sacramento Valley Railroad, and by this last road with all the other railroads of the State.

This railroad is constructed on a grade exactly level, to an inch, from one extremity to the other, and with T rails, and in all respects equal to

the best built railroads. The quarries already opened and worked are well worth to the State five hundred dollars per month. Besides the quarries and railroad, there are many other costly and valuable erections and improvements thereon. But it is not within the scope or intent of this memorial to set out the advantages, value, etc., of these premises. The committees are referred to the above mentioned reports and other sources for information on that point, and to the premises, by personal inspection of the same.

The price agreed to be paid for the premises by the State, acting by its Board of State Prison Directors, is as follows: "Fifteen thousand dollars ($15,000) in convict labor, rated at fifty cents per diem," no part of which has been paid.

The State Prison Directors, in their report of this year (1869–70) in this behalf, report as follows:

"The Board decided in favor of Folsom, whereupon the Natoma Water and Mining Company executed to the State a deed for a site for a branch prison, for about three hundred acres of land, about two miles above Folsom. No appropriation, however, having been made for that purpose no steps have been taken to erect said branch prison." (See Report of Directors of Cal. State Prison, p. 6.)

Your memorialists, therefore, crave leave to invoke the attention of the committees to the absolute and mandatory provisions of the Act above named, as follows:

"SEC. 7. Whenever a site shall be chosen for a branch prison, as provided for in this Act, and the property shall be duly conveyed to the State, the Board shall, as soon as practicable, cause such a number of convicts as they may deem proper—first selecting those whose term of imprisonment is about to expire—to be removed from the State Prison at San Quentin to the said branch site."

Your memorialists, therefore, in view of all the premises, do most earnestly and expressly remonstrate and protest against the diversion and use of all appropriations of money, and the employment or keeping in idleness of all the convicts of the State at San Quentin, in view of the facts above set forth, and against the plain and express provisions of the statute law of the State.

NATOMA WATER AND MINING COMPANY.

MEMORIAL,

ASKING AID FROM CONGRESS

FOR

IRRIGATING PURPOSES.

Introduced by Mr. Tompkins, January 23d, 1872.

T. A. SPRINGER.....STATE PRINTER.

MEMORIAL.

To the Senate and House of Representatives of the United States, in Congress assembled:

Your memorialists, the Legislature of the State of California, respectfully represent to your Honorable body that there is a vast region of agricultural land in the State of California, comprising the valleys of the San Joaquin and Sacramento Rivers, extending from the Coast Range to the Sierra Nevada, on the west and east, and more than half the length of the State from north to south, upon which, by reason of its location between high mountains, the annual rainfall is exceedingly light—generally from one third to one half of that received by some other portions of the State; that by reason of the fall of rain being so light, and the absence there of fog from the sea, the crops in said region of land have frequently failed; that in the greater part of San Joaquin Valley not more than one year in three can be relied upon for a full crop of grain; and that in that portion of the Sacramento Valley proposed to be irrigated, as hereinafter specified, the failure of crops from drought is sufficiently frequent to make the cultivation of the soil an exceedingly precarious business; that this uncertainty of crops makes it impossible for farmers of small means to live and make their homes in the greater portion of these valleys, and that consequently the pre-emption and homestead systems of the United States have proved a failure in these central plains of California; that the formation of the country affords great facilities for irrigating these valleys by means of canals and of reservoirs for collecting and storing the flood waters from the melting snows and the rainfall of the Sierra Nevadas and of the Coast Range, which now yearly are carried to the ocean in the Winter and the Spring freshets; but that the construction of such canals and reservoirs will be a gigantic undertaking, and will require an enormous expenditure; that such an undertaking is hardly an experiment, inasmuch as in portions of India very similarly situated as to soil and climate, one hundred million pounds sterling have been expended in a grand system of irrigation, which has produced the happiest results in vastly increased production and in regularity of crops. Your memorialists further represent that the San Joaquin and King's River Canal and Irrigation Company, a corporation incorporated under the laws of the State of California, has designed, and is already carrying into partial operation, a system of canals and reser-

voirs for the purpose of irrigating the land of the San Joaquin Valley, and has already constructed a canal for the purpose of irrigation, forty miles in length, fifty-two feet wide and six feet deep; that for the full and complete carrying out of the system of irrigation designed by said corporation, it will be necessary to use Tulare Lake, Buena Vista Lake, and Kern Lake, with some other smaller lakes, as reservoirs, and also to construct artificial reservoirs at such places as may be suitable, in order to save the surplus waters of the rivers and streams of said valley in freshet time, to be used for irrigation in the dry season, by means of which two crops of grain can be raised on the irrigated land annually, and grass can be kept green and growing during the whole year. Your memorialists further represent that the California Irrigation Company, a corporation incorporated under the laws of this State, has devised a system of canals for the irrigation of that portion of the Sacramento Valley on the west side of the Sacramento River, by utilizing for that purpose the waters of said Sacramento River, and of its tributaries heading in the Coast Range of mountains, and stands in like need of Government aid in constructing its canals with the San Joaquin and King's River Canal and Irrigation Company hereinbefore mentioned; that the stockholders and directors of both said corporations are well known throughout California as gentlemen of substantial means, and among the most energetic and enterprising citizens of the State; that their character is a sufficient guarantee of their good faith in the enterprise undertaken by them; that their plan of operations embraces no less a thoroughly organized system of inducing immigration from European countries, for the purpose of settling up the lands made fruitful by their irrigation works, than the construction of the canals, reservoirs, etc., for irrigation; that the settlements upon the lands to be benefited by their operations are so sparse and the population so scattered, that it would be many years before enough water could be sold from the irrigating canals to be constructed to pay a remunerative interest on the investment; that it will be indispensable to the success of the operations of these companies that foreign capital, in large amounts, shall be enlisted, which, in our opinion, can hardly be brought about unless the aid of Government shall be given, at least to the extent herein asked. Your memorialists further say that, in their opinion, the result of the construction of the proposed canals will be to settle up with a dense population the whole region irrigated; for, with irrigation, the world may be sought over in vain for so happy a conjunction of fertile soil and genial climate. Wherefore, they pray that a grant may be made by Congress to said San Joaquin and King's River Canal and Irrigation Company and to said California Irrigation Company, respectively, of every alternate section designated by even numbers, not sold, reserved, or otherwise disposed of by the United States, for five miles on each side of any canal constructed by said corporations severally, for irrigation (such canal to be not less than fifty feet wide and six feet deep), with the privilege to said several corporations of selecting indemnity lands anywhere in the same United States Land District, in lieu of any even sections, within such limits, which may be sold, reserved, or otherwise disposed of by the United States.

REPORT

OF

Senate Judiciary Committee

AGAINST

ASSEMBLY BILL No. 305.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

MR. PRESIDENT:

The undersigned, one half of the members of the Committee on Judiciary, have had under consideration Assembly bill number three hundred and five, an Act to provide for funding the indebtedness of the reclamation and levee districts of the State, and for themselves beg leave to report that no more important bill has been submitted for the consideration of the Legislature. The amendments that have been agreed to by the committee, if adopted by the Senate, will relieve it of some of its worst features; yet enough remain to render it, in the opinion of the undersigned, bad in principle, and likely to result most disastrously in practice.

As it is a measure urged ostensibly in the interest of development, we have wished to give it our support. It is with regret, therefore, that we find ourselves compelled most earnestly to protest against its passage, for the following among many other reasons: The swamp and overflowed lands of the State, amounting to several millions of acres, have been given by the General Government to the State for the express purpose of securing its reclamation. In like manner, by a system well understood, the State gives the land under certain limitations and restrictions to those who shall reclaim it. By another Act, which, we are informed, has passed the Assembly, it is provided that the restrictions shall be removed, and the title of the State given to the purchaser, when two dollars an acre shall have been expended thereon, whether the land is thereby reclaimed or not. By the bill now under consideration it is provided that the work of reclamation may all be done upon credit, the bonds of the district issued to an amount that may equal twenty-five dollars an acre, and all moneys previously paid on assessments be paid back in these bonds to the parties who had paid the same. Thus every dollar would be refunded, the State would have lost its title, the parties holding it would have the land free from any further obligation to reclaim, and the way would be prepared to secure that vast domain to a few shrewd and bold speculators who had the ability to conceive and the courage to carry out the stupendous scheme. Thus the whole policy of the State in relation to the swamp and overflowed lands could be subverted, and the worst monopoly that has yet been attempted in the lands of the State could be carried forward to complete success.

We can now only advert to other considerations that have influenced us in arriving at the conclusion that this ought not to pass.

It will prevent the divisions of the lands into small farms.

It will impose a specific lien upon the lands of the minority at the will of the majority, and thus be subject to all the objections that have been urged to Acts granting subsidies, and in a worse form than has ever been attempted in favor of other public improvements, inasmuch as a direct and specific incumbrance is more burdensome than a general one that is borne in common by all the lands in the county.

It will place the title to all the lands in a condition similar to the great leasehold estates, out of which the well known anti-rent troubles at the East have arisen, by subjecting it to the payment of a semi-annual rent for twenty years under the name of interest.

It will build up a great interest that will not find it difficult to present a plausible claim upon the State for relief from the bonds, and that we believe will before many years ask the State to assume them. We are not now prepared to say that even that would be beyond the skill that has framed and the ability that expects to pass this bill.

Want of time compels us to reserve other objections until the bill shall be before the Senate for consideration, and we can now only renew our recommendation that the bill do not pass.

EDWARD TOMPKINS,
H. LARKIN,
J. J. DeHAVEN,
H. K. TURNER,
M. P. O'CONNOR,
Of the Committee on Judiciary.

March 16th, 1872.

MINORITY REPORT

OF

SAN FRANCISCO DELEGATION

ON

ASSEMBLY BILL No. 228.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

SACRAMENTO, March 7th, 1872,
Nineteenth Session of the Legislature.

MR. SPEAKER:

The undersigned, minority of the San Francisco delegation, to whom was referred Assembly bill number two hundred and twenty-eight, entitled an Act to provide a remedy in certain cases, report that they have considered the same, and are of the opinion that the passage of said bill and substitute will be an injustice upon the citizens of the City and County of San Francisco, because it requires the people at large to pay for a local improvement sought for and forced upon the city by the property owners of the locality now seeking relief.

Second, that the Act entitled an Act to authorize the Board of Supervisors of the City and County of San Francisco to modify the grades of certain streets, approved March thirtieth, eighteen hundred and sixty-eight (statutes eighteen hundred and sixty-seven, page five hundred and ninety-four), clearly contemplate the total exemption of the City and County of San Francisco at large from all liability, both from the expense of the work and damages suffered therefrom, and that both should be paid by the property owners in the locality improved; that this exemption is clearly a part of the contract between the people of the locality and the people at large represented in the Legislature at the date of the passage of the Act, and any change in that contract at this time would be an act of injustice which this Legislature should not tolerate. And we believe that if the present proposition had been offered in connection with the original Act, that Act would never have been passed. Therefor we dissent from the opinion of the majority of the delegation, and recommend that Assembly bill number two hundred and twenty-eight do not pass.

C. JOST,
For minority of the San Francisco delegation.

REPORT

OF

ASSEMBLY COMMITTEE

ON

STATE HOSPITALS.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

MR. SPEAKER :

Your Committee on State Hospitals have the honor to report that in compliance with the duties imposed upon them they respectfully state they have examined the City and County Hospital, located in the City of San Francisco, and find that, though overcrowded for want of space, it is properly conducted, and the appropriation asked for (seventy-five thousand dollars) from the General Fund of the county should be granted.

The Almshouse was also visited. The neatness shown, the regularity in the business conduct of the establishment, and the evident benefit resulting to those who are compelled by necessity to accept the charities of the county and State, strongly induces the committee to report that the amount asked for cannot be more appropriately made.

In this connection we may state that great credit is due to Mr. and Mrs. Keating, the Superintendent and Matron, for their efforts to make comfortable the inmates. The grounds reflect credit upon those having the same in charge, and if more space was allowed for cultivation, in a short time the institution could be made self-sustaining.

The Industrial School was also visited, and after a careful examination your committee is compelled to report, that from observation and from all information obtained, the recommendation is that the school be placed under the control of the Board of Supervisors of San Francisco.

The Magdalen Asylum, a reformatory establishment for young girls, is also one of the institutions that appeals to the charity of all. Conducted in a proper manner, it presents to your committee the urgent necessity for its continuance; and as it is under the charge of those who at all times, under their vow, are devoted to performing good deeds, we deem it but due to them to cordially recommend an appropriation of ten thousand dollars for the two fiscal years ending June thirtieth, eighteen hundred and seventy-four.

Your committee also visited the San Francisco Female Hospital, under charge of Doctor C. T. Deane. This hospital, managed mostly by ladies, is for the use of females who, deprived of means, are compelled to ask for aid in the most trying position in woman's life. No charge is allowed to be made against any patient, and we find from examination of the records that persons in all positions in society and from all parts of the

State are admitted to this institution to obtain the benefits of the care of the managers and the skill of the physicians in attendance. The request of ten thousand dollars for the two fiscal years ending June thirtieth, eighteen hundred and seventy-four, your committee cheerfully recommend.

The committee also visited the Lying-in Hospital and Foundling Asylum, under charge of Doctor Hardy. The committee's recommendation would simply be a repetition of that made in reference to the Female Hospital, with the exception that occasionally patients who pay for attendance are received in the Lying-in Hospital. The neatness of the establishment was remarked, and the knowledge of the fact that persons from all portions of the State derive benefits from the same, allows your committee to recommend the appropriation we deem necessary (ten thousand dollars) for the two fiscal years ending June thirtieth, eighteen hundred and seventy-four.

W. W. STILLWAGON.

REPORT

OF

The Joint Committee on Revision

ON THE

CODE OF CIVIL PROCEDURE.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

To the Honorable the Assembly of the State of California:

The Joint Committee on Revision, appointed by the Legislature to examine the Code of Civil Procedure, Civil and Penal Codes, beg leave to make the following report:

Your committee have carefully examined the bill for a Code of Civil Procedure prepared by the Revision Commission, and approved by Messrs. Tuttle and Johnson, the Advisory Board. This Code embodies in a single volume the laws of this State relative to Civil Procedure. It bears every evidence of having been prepared with the greatest care.

The matter is arranged in a convenient form, easy of reference. The only material departure from our present law is in relation to the preparation of cases for appeal, or for hearing on motion for a new trial. For the cumbersome system of statements and counter statements a system founded upon bills of exception has been adopted. The system adopted is contained in a few well drawn sections, which stand out in marked and favorable contrast to the present law. Indeed, your committee feel confident that there is not a lawyer who has had any experience in the practice but will say that this change alone, introducing certainty where all is uncertainty, is worth the whole cost of the revision.

After a careful examination, we give to this Code our unqualified approval and indorsement, and herewith report it to the Legislature and recommend its adoption.

C. G. W. FRENCH, Chairman,
F. E. SPENCER,
Assembly Committee.

W. W. PENDEGAST, Chairman,
J. T. FARLEY,
JAMES VAN NESS,
A. COMTE, JR.,
Senate Committee.

REPORT

OF

The Joint Committee on Revision

ON THE

CIVIL CODE.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

To the Honorable the Legislature of the State of California:

The Joint Committee on Revision, appointed by the Legislature to examine the Code of Civil Procedure, Civil and Penal Code, beg leave to make the following report:

Your committee have examined the bill for a Civil Code, prepared by the Revision Commission and approved by Messrs. Johnson and Tuttle, the Advisory Board, and take great pleasure in concurring in their report.

We give to this Code our unqualified approval and indorsement, and herewith report it to the Legislature and recommend its adoption.

W. W. PENDEGAST, Chairman;
A. COMTE, JR.,
J. T. FARLEY,
JAMES VAN NESS,
Senate Committee.

C. G. W. FRENCH, Chairman;
F. E. SPENCER,
Assembly Committee.

We, the Committee on the Political Code, concur fully in the above report and recommendation.

WILLIAM IRWIN, Chairman;
GEORGE OULTON,
M. P. O'CONNER,
S. C. HUTCHINGS,
GEORGE C. PERKINS,
Senate Committee.

WM. R. WHEATON, Chairman;
E. B. MOTT, JR.,
W. N. DE HAVEN,
J. A. EAGAN,
J. K. LUTTRELL,
Assembly Committee.

REPORT

OF

THE JOINT COMMITTEE

ON THE

POLITICAL CODE.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

To the Honorable the Legislature of the State of California:

The Joint Committee on Revision appointed by the Legislature to examine the Political Code prepared by the Revision Commission make the following report:

Your committee met on the day of January and have held sessions almost daily since. During this time it has given to the Code a careful examination, reading it line by line, and comparing it with the statutes of this State, and when necessary with the laws of other States. This Code makes an octavo volume of seven hundred pages, the whole of which would be comprised within two hundred and fifty pages of Hittell's Digest. It is divided into five Parts as follows: Part I. Of the sovereignty and people of the State, and of the political rights and duties of all persons subject to its jurisdiction; II. Of the chief political divisions, seat of government, and legal distances of the State; III. Of the Government of the State; IV. Of the Government of Counties, Cities, and Towns; V. Of the definition and sources of law, the common law, the publication and effect of the Codes, and the express repeal of statutes.

PART I

Is divided into three short Titles, occupying in all six pages and a half. It provides that the sovereignty and jurisdiction of the State extend to all places within its limits; gives the legislative consent to the purchase or condemnation by the United States of lands for governmental purposes (following our statutes); prescribes the rights of the people as to holding office, etc. This part is but preliminary, containing a few plain, general rules upon the subjects included within it, not of any great importance either way, except so far as they give the legislative consent to the purchase or condemnation of property by the Federal Government.

PART II

Commences on page thirty-five, and gives the political divisions of the State, counties, Senatorial, Judicial Districts, etc., the seat of Government and legal distances in the State, following existing laws.

PART III

Contains nine titles, as follows: Title I. Public officers; II. Elections; III. Education; IV. Militia; V. Public institutions; VI. Public ways; VII. General police of the State; VIII. Property of the State; IX. Revenue of the State. Title I is divided into seven Chapters. The first gives the classification of public officers. Chapter II relates to the Legislative Department, and is divided into twelve articles, as follows: Article I. Number, designation, and term of office and election of members of the Legislature; II. Meeting and organization of the Legislature; III. Number, designation, election, and appointment of officers and employés of the Legislature; IV. Powers and duties of officers and employés of the Legislature; V. Compensation of members, officers, and employés of the Legislature; VI. Contesting elections for members of the Legislature; VII. Contesting elections for Governor or Lieutenant Governor; VIII. Attendance and examination of witnesses before the Legislature and committees thereof; IX. Enactment of statutes; X. Promulgation of statutes; XI. Operation of statutes; XII. Public reports.

These articles include all the various provisions of law relative to the subject matter thereof. These statutes have been gathered together, pruned of redundant matter, some new sections added on minor points, and the whole systematically arranged. The nature of the additions may be well illustrated by referring to section three hundred and twelve, and the reasons that led to its introduction. The section is as follows:

SEC. 312. If on the day the Governor desires to return a bill without his approval and with his objections thereto to the House in which it originated that House has adjourned for the day (but not for the session), he may deliver the bill with his message to the presiding officer, Secretary, Clerk, or any member of such House, and such delivery is as effective as though returned in open session, if the Governor on the first day the House is again in session by message notifies it of such delivery, and of the time when and the person to whom such delivery was made.

In Harpending vs. Haight, April term, eighteen hundred and seventy, which was a case founded on the following facts: a bill originated in the Senate providing for the opening of New Montgomery street, and had passed both branches of the Legislature, and was transmitted to the Governor; on the last day allowed by law for its return the Governor attempted to return the bill with a veto message by his Private Secretary, but when the Secretary reached the Senate Chamber the Senate had adjourned for the day; after the adjournment of the Legislature the Governor, claiming that the return of the bill had been prevented by the adjournment of the Senate, and that the bill had not become a law, refused to cause the Secretary of State to certify it as such; whereupon Harpending applied to the Supreme Court for a mandate compelling the Governor to cause the certificate to be made. Upon this application the Court held that the bill had become a law, and the certificate must be made. In the opinion of the Court it is said that the Governor might have returned the bill to any officer, member, or attaché of the Senate, and such is the law of this State to-day. It is obvious that the Governor might, by collusion with a member or officer of the Senate, defeat any bill. He could return privately to a Senator or officer, and though

in contemplation of law it would be in custody of the Senate, yet the Senate might never know that fact; hence the Commissioners have framed the section quoted, requiring the Governor to notify the body in which the bill originated of the mode and manner of its return, in which event the body could control the bill if desirable. This illustration fairly presents the character of the changes made in this part of the work. Instead of using the word "change" in this connection it would be more appropriate to say that omissions have been supplied.

EXECUTIVE OFFICERS.

Chapter III deals with executive officers, and is divided into nineteen articles. This Chapter is a revision of the existing laws of the State. The provisions of law relative to each officer have been collected from the body of the statutes, and plainly and concisely stated. If any one interested in the matter will take the pains to compare either article with the laws as they now stand, the merit of the work will be apparent.

Chapter VII is divided into five articles, as follows: Article I. Clerk of the Supreme Court; II. Reporters of the Supreme Court; III. Notaries Public; IV. Commissioners of Deeds; V. Other officers. Premising that the duties of Notaries in both instances are fixed by sections preceding, we insert, for the purpose of showing the character of the revision, a section from Article III of Chapter VI of the Code and the section as it now stands upon the statute book:

Section 801 *of the Political Code.*

SEC. 801. For the official misconduct or neglect of a Notary Public, he and the sureties on his official bond are liable to the parties injured thereby for all the damages sustained.

Section 13 *of the Act of April* 25, 1862 (*Statutes* 1862, *p.* 443).

SEC. 13. For any misconduct or neglect of duty in any of the cases in which any Notary Public, appointed under the authority of the State, is authorized to act, either by the law of this State, or by any other State, Government, or country, or by the law of nations, or by commercial usage, he shall be liable on his official bond, to the parties injured thereby, for all the damages sustained.

The penal clause of section thirteen has been carried into the Penal Code. A comparison of other sections in this Chapter with the Chapters from which they have been drawn, will show that the comparison above made is not an unfair one.

Chapter VII is divided into twelve Articles, as follows: Article I. Disqualifications; II. Restrictions upon the residence of officers; III. Powers of deputies; IV. Appointment and duration of term; V. Nominations and commissions; VI. Oath of office; VII. Prohibitions applicable to certain officers; VIII. Salaries, when title is contested; IX. Bonds of officers; X. Resignations, vacancies, and the mode of supplying them; XI. Proceedings to compel delivery of books and papers; XII. Miscellaneous provisions. The remarks relative to the two preceding Chapters apply with equal force to this.

In relation to portions of this Title, Controller James J. Green, under date of January sixteenth, writes to the Commission as follows:

"I have carefully examined the Political Code prepared, so far as it relates to the duties of the office of Controller. It states the law clearly and concisely, and receives my hearty approval. I trust the Legislature

will adopt the same. I would also suggest that it would be well to put the provisions relating to State officers in force at once."

OF ELECTIONS.

Title II, treating of elections, has been before the public for a long time and has met with universal approval. Its provisions are plain and simple, and although it is much broader in its scope than the present law, it is compressed within less than half the space.

Your committee believe that its provisions will tend to the purity of the elective franchise, and will prove of lasting benefit to the State.

Title III is devoted to

EDUCATION.

It is divided into three Chapters: Chapter I. University of California; II. State Normal School; III. Public Schools. This title is a strict revision of the present laws upon the same subjects, rearranged and condensed most materially. Professor Bolander and ex-Superintendent Swett have given this portion of the work a close examination, and have expressed the most favorable opinions as to the manner in which it has been done.

Title IV,

STATE MILITIA,

Embodies in the main provisions of existing laws. It is divided into five Chapters. Of this Title Adjutant General Foote, in a note addressed to the Commissioners, under date of January eighteenth, says:

"I have received a copy of the Political Code containing the militia law as codified, and have examined it with care. In point of arrangement it seems to me complete. I have also compared the militia law of the statutes with the codified law, and find that while the provisions of the statutes have been carefully preserved, much verbiage has been omitted, things that were obscure have been made plain, and some seeming conflicts have been harmonized. Great credit is certainly due the Commission for the manner in which this labor has been performed."

Title V, on

PUBLIC INSTITUTIONS,

Is divided into five Chapters, containing a logical arrangement of existing laws.

Title VI,

OF PUBLIC WAYS,

Is divided into seven Chapters, including substantially our statutes upon the various subjects, with some few new provisions to supply omissions, save Chapters II and III. In relation to the former the Commissioners say: "Roads and highways presented another subject of difficulty. Not less than one hundred and twenty-five Acts concerning roads and highways have been placed upon the statute books. We have prepared a general law, and inserted it as a Chapter, under Title VI, of Part III. It is doubtful whether the condition of the State admits to-day of a general road law; if it does, the policy of enacting one is not a debateable question. In order that a difference of opinion on this question may not

jeopardize the adoption of this Code we have prepared an alternate Chapter, continuing in force the existing laws."

Your committee have deemed it advisable to report the road law as part of the Code, and have amended it, with the concurrence of the Commissioners, in several particulars; and a provision has been inserted making it applicable only to such counties as have no special road law. It does not affect any county to which any existing law is made applicable by name, but such counties may at any time in the future by a repeal of the laws applicable to them come under the provisions of the Code.

Chapter I of this Title covers fifty pages, and is divided into eleven Articles, as follows:

Article I. General Provisions respecting Public Waters; II. Navigation; III. Floating lumber; IV. Wrecks and wrecked property; V. Pilots and Pilot Commissioners; VI. Pilot Regulations for San Francisco, Benicia, and Mare Island; VII. Pilot Regulations for Humboldt Bay and Bar; VIII. Port Wardens; IX. San Francisco Harbor and State Harbor Commissioners; X. Harbor Commissioners for Port of Eureka; XI. Sailors and sailor boarding houses. The titles of the Articles indicate the matter contained and the laws that have been taken into this Chapter.

Title VII,

OF THE POLICE OF THE STATE,

Is divided into fifteen Chapters, as follows: Chapter I. Immigration; II. Preservation of the public health; III. Registry of births, marriages, and deaths; IV. Dissection; V. Cemeteries and sepulture; VI. Lost and unclaimed property; VII. Marks and brands; VIII. Weights and measures; IX. Labor and materials on public buildings; X. Hours of labor; XI. Time; XII. Money of account; XIII. Auctions; XIV. Fires and firemen; XV. Licenses. Of these, with the exception of Chapters III and IX, it may also be said that it embodies substantially the present laws, carefully revised and arranged.

Title VIII,

OF THE PROPERTY OF THE STATE,

Is divided into three chapters, as follows: I. Public lands; II. Yosemite Valley and the Mariposa Big Tree Grove; III. The State Burying Ground. Chapter II, the principal one of the Title, is a close revision and arrangement of existing laws.

The last Title of this Part is Title IX,

OF REVENUE.

The Commission have adopted a plan which embodies some of the suggestions of the Board of Equalization, and those of Controllers Watt and Green, and other gentlemen who have given the matter much attention. Of this the Commissioners say: "The subject of revenue presented serious difficulties. Each legislative year brings with it changes and amendments in the revenue laws, and it may well be doubted whether anything permanent can be adopted without changes in the State Constitution. In obedience to the law creating this Commission, we have inserted as Title IX of Part III a revenue law, and have also placed an alternate Title in relation to revenue, which continues in force the present law, remitting the question to the wisdom of the Legislature."

Your committee have no hesitation in recommending the revenue law as it now stands in the Political Code. It is, as your committee believe, far superior to any Act upon the subject that has ever been devised in this State. And we would recommend, upon the adoption of this Code, the passage of an Act putting the Title relative to revenue and kindred provisions of the Penal Code into effect at once. We believe that under the law proposed in the Code the rate of State taxation for the present year would fall to sixty cents on the one hundred dollars; that thousands of dollars would be saved to the citizens of the State, and at the same time the revenue be more effectually collected.

Part IV, of

THE GOVERNMENT OF COUNTIES, CITIES, AND TOWNS.

Title I, of counties, is divided into two Chapters; the first relates to the boundaries and county seats of counties, and the second to general provisions concerning counties. No changes worthy of note have been made. Title II, of the government of counties, is divided into five Chapters, as follows: Chapter I. Counties as bodies corporate; II. The Board of Supervisors; III. County officers; IV. Salaries and fees of office; V. Other county charges.

These Chapters, in the main, are but the result of revisions of existing laws, and the only material change worthy of note is the attempted solution of

THE FENCE QUESTION.

This subject the Code, as reported, leaves in its present condition. The Commissioners had prepared a plan. Their plan provided in substance that the whole question should be remitted to the Boards of Supervisors of the several counties, who might, upon the petition of a majority of the electors of the county or of a district thereof, in the first event declare the whole county a fence district, and in the latter, the district a fence district, and "adopt and provide for the enforcement of rules and regulations for the government of landowners and residents of such districts, in the erection and maintenance of fences, prescribe their character and the materials of which they must be composed, and define the rights secured by an observance of such rules and regulations, 'and the forfeitures and penalties for their non-observance.'" It also provided that fence districts and fence regulations once ordained and established, must not be abrogated or abolished for a period of five years. We thought it advisable to omit this from the Code and leave it as a separate subject for consideration.

FEES AND SALARIES.

Upon this topic the Commissioners say: "We have not attempted to do anything relative to the fees and salaries of county officers, except to recapitulate the salaries of County Judges and District Attorneys as the law fixes them. It would be impossible at this day to establish a uniform and permanent system of fees and salaries. Each legislative year will bring contests over this subject, and it was deemed advisable to let the matter rest in the statutes, rather than to carry the present fee bills, at great expense, into a Code intended to be permanent."

Title III,

THE GOVERNMENT OF CITIES,

Embodies existing laws, and is divided into five Chapters, as follows: Chapter I. Cities as bodies corporate; II. Executive powers; III. Legislative powers; IV. Judicial powers; V. Certain statutes relating to cities and towns and existing corporations continued.

Cities acting under special charters or laws are not affected by the provisions of the Code, but may with the consent of the Legislature adopt such provisions.

GENERAL PROVISIONS.

Part V contains provisions which will apply to all the Codes. It relates to the definition and sources of law; the common law; the publication and effect of the Codes, and the express repeal of statutes. It is there provided that with relation to the Acts passed at this session of the Legislature the Codes must be construed as though they had been passed on the first day of the session; or, in other words, all laws passed at the present session prevail over laws upon the same subject in the Codes. With relation to each other, the Codes must be construed as though they had all been passed upon the same day and were parts of the same Acts. This Part also contains the rules by which conflicting sections—if any should be found—are to be harmonized.

If the provisions of different Titles of the Codes conflict with or contravene the provisions of other Titles, the provisions of each Title must prevail as to all matters and questions arising out of the subject matter of such Title.

The same rule is applied to Chapters and Articles. If conflicting provisions are found in different sections of the same Chapter or Article, the section last in numerical order prevails.

These provisions seem to have been inserted out of abundant caution, and are the ready remedies for almost any defect inherent.

It is also provided "that the common law of England, so far as it is not repugnant to or inconsistent with the Constitution of the United States or the Constitution or laws of this State, is the rule of decision in all the Courts of this State." (Statutes 1850, p. 219.)

In conclusion, your committee may say of the bill for a Political Code that it has been prepared with great care; is a work worthy of our State; that its adoption will confer a lasting benefit upon the people.

We report the bill to the Legislature with our unqualified approval, and earnestly recommend it passage.

WILLIAM IRWIN, Chairman,
GEORGE OULTON,
M. P. O'CONNOR,
GEORGE C. PERKINS,
S. C. HUTCHINGS. } Senate Committee.

WILLIAM R. WHEATON, Chairman,
J. K. LUTTRELL,
J. A. EAGAN,
E. B. MOTT, Jr.,
W. N. De HAVEN. } Assembly Committee.

REPORT

OF

THE ADVISORY COMMITTEE

ON THE

PENAL CODE.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

To His Excellency Newton Booth,
Governor of the State of California:

The Advisory Committee on the Revision of the Laws have the honor to submit to you, and through you to the Legislature, their report upon the Penal Code.

They have made a careful and critical examination of the Penal Code prepared by the Revision Commission. In doing so they have compared it, section by section, with our existing laws, and also with the Criminal Codes of some of the most populous States. In the performance of this labor, they have constantly consulted with the Commissioners and suggested such amendments as they deemed advisable.

The Act of April fourth, eighteen hundred and seventy, providing for a Commission for the Revision of the Laws, requires the Commissioners to "correct verbal errors and omissions and to suggest such improvements as will introduce precision and clearness into the wording of the statutes," and "to recommend all such enactments as shall, in the judgment of the Commission, be necessary to supply the defects of and give completeness to the existing legislation of the State."

In the preparation of the Penal Code, the Commissioners have strictly followed the direction of the law. While many sections of existing laws have been redrawn to correct verbal errors and to give them precision and clearness, their spirit and substance have in all cases been preserved. In a few instances terms of imprisonment have been changed, but such changes are confined to cases where there was an inequality in the period of punishment between crimes of a higher and lower grade. Many new sections have been introduced, but these were necessary to "supply the defects of and give completeness to the existing legislation of the State."

We believe that the bill for an Act to establish a Penal Code, as now prepared by the Commissioners, should be enacted into a law. No inconvenience can arise from its adoption, as full provision has been made for the punishment of offenses committed before it takes effect.

Our thanks are due to the Commissioners for the courtesy they have extended to us, and for the readiness they have at all times manifested to aid us in our investigations. In the preparation of this Code they have earned and deserve the thanks of the legal profession, and of the State.

Respectfully submitted,

CHARLES A. TUTTLE,
SIDNEY L. JOHNSON.

Sacramento, February 1st, 1872.

FIRST REPORT

OF THE

JOINT COMMITTEE TO EXAMINE THE CODES

PREPARED BY THE

REVISION COMMITTEE.

REPORT.

MR. SPEAKER:

The Joint Committee on Revision, appointed by the Legislature to examine the Code of Civil Procedure, Civil and Penal Codes, beg leave to make the following report:

Your committee, having met and organized, received from the Revision Commissioners the work completed by them, comprising the Civil and Penal Codes, and Code of Civil Proeedure.

Governor Haight, coöperating with Governor Booth, on the —— of November last appointed two gentlemen of eminence in the legal profession—Messrs. Charles A. Tuttle and Sidney L. Johnson—to examine the work of revision. This appointment has since been confirmed by the present Legislature.

Messrs. Tuttle and Johnson have already examined the Act to establish a Penal Code, section by section, and made many valuable suggestions, which have been adopted. They have also submitted a report to the Governor, and through him to the Legislature, expressing their satisfaction with the Act and urging its passage. The opinion of these gentlemen so well qualified for the task imposed upon them, and the care and thought which they have bestowed upon a critical examination of that Code, is deserving of the utmost regard, and should have great weight with the members of your Honorable body.

Your committee, acting in concert with these gentlemen, and assisted by the Revision Commissioners, deemed it advisable to first examine the bill for "An Act to establish a Penal Code," and fully appreciating the grave responsibility which rested upon them, feel confident of having given to the subject that strict and careful attention which its importance demanded.

The bill, as prepared by the Commissioners, gives evidence at once of much learning, industry, and care on their part. They have in all instances rendered clear that which before was vague and unintelligible, and have made many additions based on the decisions of our Courts.

These additions, though not of very great importance when taken separately, yet viewed as a whole, together with the systematic and logical arrangement adopted by the Commission, are of the highest advantage, and make at once a complete and simple Code, or system of laws, easy of comprehension not only to those skilled in the legal

profession, but to any person of moderate intelligence, whatever may be his trade or calling.

It was well said by the Commissioners in a prefatory note to their printed work, that "every one is presumed to know the law;" yet under the system heretofore existing in this State, such knowledge is as unattainable by the masses as it would be were the laws written, like those of Caligula, "in small character upon high pillars." It may well be doubted whether the State has the moral right to hold the citizen responsible for an act or omission, not evil within itself, but wrong because prohibited, and which it is impossible that the citizen should know is evil or prohibited by law. At least, it is the duty of the State to give to every citizen ready means by which a knowledge of the penal laws may be attained.

The Penal Code embraces within the compass of a single volume (which, if printed in the same style, would comprise about one hundred and ten pages of Hittell's Digest) the whole body of the law relating to crimes and punishments, criminal procedure, prisons and jails.

It is intended to embrace every species of act or omission which is subject to criminal punishment; to correct the errors and supply deficiencies in existing definitions of crimes; to harmonize the provisions of punishments; to prohibit acts deserving of punishment but not punishable by the present law; and to state clearly the laws relating to the government and discipline of the State Prison, County Jails, and of the conduct and treatment of prisoners confined therein. At present, in addition to the crimes and punishment Act of eighteen hundred and fifty, and the amendments thereto, there are about four thousand statutes containing penal provisions. The election laws contain over thirty, the corporation laws about twenty, and the revenue laws more than fifty, and so on. There is a statute, also, making every act or omission which was a misdemeanor at common law punishable in this State. From this it will at once be perceived that in order to understand what acts or omissions are punishable it is necessary not only to examine eighteen volumes of our own statutes, containing nearly seven thousand separate enactments, but also the whole body of the common law of England, together with a mass of adjudications often difficult and at times impossible to reconcile.

The labor of drawing from this inharmonious system the existing laws, reducing them to an accessible form, resolving doubts, removing vexed questions, and abolishing useless distinctions, has been a work of great responsibility and difficulty, but your committee feel confident it has been performed with the greatest caution and discrimination. But few changes in the present law have been attempted, and the advantages of those which have been made are so apparent as not to be questioned.

The Penal Code is divided into three parts: Part I—Of Crimes and Punishments; Part II—Of Criminal Procedure; Part III—Of the State Prison and County Jail.

Part I—Of Crimes and Punishments, is divided into Titles as follows:

Title I—Of persons liable to punishment for crime, stating clearly who are capable of committing crimes, and who are liable to punishment therefor.

Title II—Of parties to crimes, classifying the parties as principals and accessories, and prescribing the punishment of accessories.

Title III—Of offenses against the sovereignty of the State, defining treason, misprision of treason, and the punishment therefor.

Title IV—Of crimes against the elective franchise, from the election

and registry laws, with a few new sections prescribing the punishment for bribery, for preventing or disturbing public meetings, and for betting on elections.

Title V—Of crimes by and against the executive power of the State, comprising provisions upon the subject drawn from the various statutes relative thereto, with one new section, making it a misdemeanor to exercise the functions of any public office without having taken the oath of office and filed an official bond if one is required.

Title VI—Of crimes by and against the legislative power, taken principally from existing statutes, prescribing punishments for such offenses as altering copies of enrolled bills, etc., giving, offering, or receiving bribes, and some new sections relative to punishments for preventing or disturbing the meetings of the Legislature.

Title VII—Of crimes against public justice, subdivided in Chapters, and defining and punishing such offenses as: I. Bribery and corruption; II. Rescues; II. Escapes and aiding therein; IV. Forging, stealing, mutilating, and falsifying judicial and public records and documents; V. Perjury, and subornation of perjury; VI. Falsifying evidence; VII. Other offenses against public justice; VIII. Conspiracy.

These are principally from existing statutes. Clearness of expression is given to the present laws, and some slight modification of language is made where a necessity for such change has made itself apparent.

Title VIII—Of crimes against the person—is subdivided into Chapters relating to such offenses as: I. Homicide; II. Mayhem; III. Kidnapping; IV. Robbery; V. Attempts to kill; VI. Assaults with intent to commit felony, other than assaults with intent to murder; VII. Duels and challenges; VIII. False imprisonment; IX. Assault and battery; X. Libel.

This Title is a logical arrangement of the subjects treated of, and conciseness and conspicuity has been aimed at rather than any change of the law as it now exists.

Title IX—Of crimes against the person and against public decency and good morals—subdivided into Chapters, and relates to such offenses as: I. Rape, abduction, carnal abuse of children, and seduction; II. Abandonment and neglect of children; III. Abortions; IV. Child stealing; V. Bigamy, incest, and the crime against nature; VI. Violating sepulture and the remains of the dead; VII. Crimes against religion and conscience, and other offenses against good morals; VIII. Indecent exposure, obscene exhibitions, books, and prints, and bawdy and other disorderly houses; IX. Lotteries; X. Gaming; XI. Pawnbrokers; and XII. Other injuries to persons.

This Title embodies all the existing law on the various subjects, and the additions thereto by the Commissioners need only to be read to be approved.

Title X—Of crimes against the public health and safety—relates to such offenses as nuisances; violation of quarantine laws; mistake of druggists in labeling drugs or putting up prescriptions; setting woods on fire; misconduct, carelessness, or ignorance of engineers, switchmen, etc.; fast driving on highways, and offenses of similar character. Many of these provisions are new, but their utility cannot admit of doubt.

Title XI—Of crimes against the public peace—relating to such crimes as riots, prize fights, disturbance of the peace, and kindred topics.

Title XII—Of crimes against the revenue of the State. This Title is drawn from the present law.

Title XIII—Of crimes against property—relating to such crimes as: I. Arson; II. Burglary and housebreaking; III. Having possession of burglarious instruments and deadly weapons; IV. Forgery and counterfeiting; V. Larceny; VI. Embezzlement; VII. Extortion; VIII. False personation and cheats; IX. Fraudulently fitting out and destroying vessels; X. Fraudulently keeping possession of wrecked property; XI. Fraudulent destruction of property insured; XII. False weights and measures; XIII. Fraudulent insolvencies by corporations, and other frauds in their management; XIV. Fraudulent issue of documents of title to merchandise; XV. Malicious injuries to railroad bridges, highways, bridges, and telegraphs. The greater part of this Title is the law as it stands at present, made concise, clear and easy of comprehension. The sections added by the Commissioners cover offenses which should be punished, and which preserve symmetry and make the whole more perfect.

Title XIV—Malicious mischief—embracing such offenses as poisoning cattle, destroying property of various kinds, opening sealed letters, altering or destroying telegraph messages, etc.

Title XV—Miscellaneous crimes—providing punishments for violations of the game laws, vagrancy, enticing seamen to desert, etc.

Title XVI—General provisions—relating to such subjects as affect foreign conviction or acquittal, contempts, mitigation of punishment in certain cases, removal from office for violation or neglect of duty, attempts to commit crimes, punishment of second offenses, etc. One material change from the present law occurs in this Title, in sections six hundred and sixty-six and six hundred and sixty-seven, increasing the punishment of offenders upon a second conviction. It is believed by your committee that its adoption will be of much benefit. The utility of the change is discussed by the Commissioners in a note to section six hundred and sixty-seven of the Code.

These sixteen Titles, together with preliminary provisions, conclude Part I.

Part II—Of Criminal Procedure. The Commission have made very few changes in this portion of their work, and it is the law as it exists. Such subjects as writs of habeas corpus, search warrants, Coroners' inquests, proceedings against fugitives from justice, and kindred subjects, have been placed in their proper places in this Part. Some few sections have been made to conform to decisions of our Courts, and others made to carry out the provisions of sections contained in Part I. The divisions and subjects treated of in this Part are as follows:

Preliminary Provisions. Title I—Of the prevention of public offenses. Chapter I. Of lawful resistance; II. Of the intervention of the officers of justice; III. Security to keep the peace; IV. Police in cities and towns, and their attendance at exposed places; V. Suppression of riots.

Title II—Of judicial proceedings for the removal of public officers by impeachment or otherwise. Chapter I. Of impeachments; II. Of the removal of civil officers otherwise than by impeachment.

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Part III—Of the State Prison and County Jails, is divided as follows:

Title I—Of the State Prison and the discharge of prisoners therefrom before their term of service expires.

Title II—Of County Jails.

This Part is a careful compilation of the present law, clearly and concisely stated.

It would be impossible for your committee to present all the many matters which they have had under consideration during the examination of this Act. They have in many cases suggested to the Commissioners slight verbal alterations and some amendments, which have been

incorporated in the bill. Your committee now believe that the work is in as perfect a shape as possible. Great attention has been paid to prevent any inconvenience arising from its adoption at a certain specified time. It is not retroactive, does not conflict with any of the laws which may be passed this session, and saving clauses have been inserted and safeguards provided for all possible contingencies.

It must be borne in mind that *this Act does not provide for the adoption of any new system of law, but simply reënacts the existing law*, with some few modifications, amendments, and additions.

That it is exceedingly desirable to have a complete and harmonious system of laws which can easily be understood by all the citizens of the State, no one will deny. Your Committee believe that this has been accomplished so far as the same is practicable, and therefore have reported the bill for an Act to establish a Penal Code to the Senate, and recommend to the Legislature that it pass. The States of Kansas, Louisiana, Maryland, Massachusetts, Minnesota, Missouri, New Hampshire, and New Jersey have already adopted a system of revised laws or Codes. The States of Florida, Georgia, Illinois, Iowa, Michigan, Mississippi, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Tennessee, West Virginia, and Wisconsin at the present time have employed skilled lawyers to revise or codify their laws. The necessity that exists for the performance of this work has been appreciated everywhere, and California should be, as it ever has been heretofore, among the first to take any step that tends toward improvement.

Your committee believe that the system of law as embodied in the Penal Code prepared by the Revision Commission is more perfect than that prepared by any other State, and it would be well for the honor of California if, by the action of the present Legislature, it should adopt this great work, thus setting an example which will be speedily followed by all her sister States, adding new laurels to the fame which she has already so justly acquired, and at once becoming, as has been remarked, not only a lawgiver to the thousands within her borders, but to the millions who are to succeed them, and by the force of her example to not only the vast population of the whole Pacific Coast, but to the millions of citizens of other States, who will soon follow in her footsteps. Then, when the laws of all the States in this great federation are harmonious and in sympathy with each other, California, having made the first advance toward this high aim, will be entitled to the first post of honor and to the gratitude of the whole country.

C. G. W. FRENCH,
Chairman Assembly Committee;
F. E. SPENCER.

W. W. PENDEGAST,
Chairman Senate Committee;
A. COMTE,
JAS. VAN NESS,
JAS. T. FARLEY.

FIRST REPORT

OF THE

Joint Committee to Examine the Codes

PREPARED BY THE

REVISION COMMISSION.

REPORT.

To the Honorable, the Legislature of the State of California:

The Joint Committee on Revision, appointed by the Legislature to examine the Code of Civil Procedure, Civil and Penal Codes, beg leave to make the following report:

Your committee, having met and organized, received from the Revision Commissioners the work completed by them, comprising the Civil and Penal Codes, and Code of Civil Procedure.

Governor Haight, coöperating with Governor Booth, on the —— of November last appointed two gentlemen of eminence in the legal profession—Messrs. Charles A. Tuttle and Sidney L. Johnson—to examine the work of revision. This appointment has since been confirmed by the present Legislature.

Messrs. Tuttle and Johnson have already examined the Act to establish a Penal Code, section by section, and made many valuable suggestions, which have been adopted. They have also submitted a report to the Governor, and through him to the Legislature, expressing their satisfaction with the Act and urging its passage. The opinion of these gentlemen so well qualified for the task imposed upon them, and the care and thought which they have bestowed upon a critical examination of that Code, is deserving of the utmost regard, and should have great weight with the members of your Honorable body.

Your committee, acting in concert with these gentlemen, and assisted by the Revision Commissioners, deemed it advisable to first examine the bill for "An Act to establish a Penal Code," and fully appreciating the grave responsibility which rested upon them, feel confident of having given to the subject that strict and careful attention which its importance demanded.

The bill, as prepared by the Commissioners, gives evidence at once of much learning, industry, and care on their part. They have in all instances rendered clear that which before was vague and unintelligible, and have made many additions based on the decisions of our Courts.

These additions, though not of very great importance when taken separately, yet viewed as a whole, together with the systematic and logical arrangement adopted by the Commission, are of the highest advantage, and make at once a complete and simple Code, or system of laws, easy of comprehension not only to those skilled in the legal profession, but to any person of moderate intelligence, whatever may be his trade or calling.

It was well said by the Commissioners in a prefatory note to their printed work, that "every one is presumed to know the law;" yet under the system heretofore existing in this State, such knowledge is as unattainable by the masses as it would be were the laws written, like those of Caligula, "in small character upon high pillars." It may well be doubted whether the State has the moral right to hold the citizen responsible for an act or omission, not evil within itself, but wrong because prohibited, and which it is impossible that the citizen should know is evil or prohibited by law. At least, it is the duty of the State to give to every citizen ready means by which a knowledge of the penal laws may be attained.

The Penal Code embraces within the compass of a single volume (which if printed in the same style would comprise about one hundred and ten pages of Hittell's Digest) the whole body of the law relating to crimes and punishments, criminal procedure, prisons and jails.

It is intended to embrace every species of act or omission which is subject to criminal punishment; to correct the errors and supply deficiencies in existing definitions of crimes; to harmonize the provisions of punishments; to prohibit acts deserving of punishment but not punishable by the present law; and to state clearly the laws relating to the government and discipline of the State Prison, County Jails, and of the conduct and treatment of prisoners confined therein. At present, in addition to the crimes and punishment Act of eighteen hundred and fifty, and the amendments thereto, there are about four thousand statutes containing penal provisions. The election laws contain over thirty, the corporation laws about twenty, and the revenue laws more than fifty, and so on. There is a statute, also, making every act or omission which was a misdemeanor at common law punishable in this State. From this it will at once be perceived that in order to understand what acts or omissions are punishable it is necessary not only to examine eighteen volumes of our own statutes, containing nearly seven thousand separate enactments, but also the whole body of the common law of England, together with a mass of adjudications often difficult and at times impossible to reconcile.

The labor of drawing from this inharmonious system the existing laws, reducing them to an accessible form, resolving doubts, removing vexed questions, and abolishing useless distinctions, has been a work of great responsibility and difficulty, but your committee feel confident it has been performed with the greatest caution and discrimination. But few changes in the present law have been attempted, and the advantages of those which have been made are so apparent as not to be questioned.

The Penal Code is divided into three parts: Part I—Of Crimes and Punishments; Part II—Of Criminal Procedure; Part III—Of the State Prison and County Jail.

Part I—Of Crimes and Punishments, is divided into titles as follows:

Title I—Of persons liable to punishment for crime, stating clearly who are capable of committing crimes, and who are liable to punishment therefor.

Title II—Of parties to crimes, classifying the parties as principals and accessories, and prescribing the punishment of accessories.

Title III—Of offences against the sovereignty of the State, defining treason, misprison of treason, and the punishment therefor.

Title IV—Of crimes against the elective franchise, from the Election and Registry laws, with a few new sections prescribing the punishment

for bribery, for preventing or disturbing public meetings, and for betting on elections.

Title V—Of crimes by and against the executive power of the State, comprising provisions upon the subject drawn from the various statutes relative thereto, with one new section, making it a misdemeanor to exercise the functions of any public office without having taken the oath of office and filed an official bond if one is required.

Title VI—Of crimes by and against the Legislative power, taken principally from existing statutes, prescribing punishments for such offences as altering copies of enrolled bills, etc., giving, offering, or receiving bribes, and some new sections relative to punishments for preventing or disturbing the meetings of the Legislature.

Title VII—Of crimes against public justice, subdivided in Chapters, and defining and punishing such offences as: I. Bribery and corruption; II. Rescues; III. Escapes and aiding therein; IV. Forging, stealing, mutilating, and falsifying judicial and public records and documents; V. Perjury, and subornation of perjury; VI. Falsifying evidence; VII. Other offences against public justice; VIII. Conspiracy.

These are principally from existing statutes. Clearness of expression is given to the present laws, and some slight modification of language is made where a necessity for such change has made itself apparent.

Title VIII—Of crimes against the person—is subdivided into Chapters relating to such offences as: I. Homicide; II. Mayhem; III. Kidnapping; IV. Robbery; V. Attempts to kill; VI. Assaults with intent to commit felony, other than assaults with intent to murder; VII. Duels and challenges; VIII. False imprisonment; IX. Assault and battery; X. Libel.

This Title is a logical arrangement of the subjects treated of, and conciseness and conspicuity has been aimed at rather than any change of the law as it now exists.

Title IX—Of crimes against the person and against public decency and good morals—subdivided into Chapters, and relates to such offences as: I. Rape, abduction, carnal abuse of children, and seduction; II. Abandonment and neglect of children; III. Abortions; IV. Child stealing; V. Bigamy, incest, and the crime against nature; VI. Violating sepulture and the remains of the dead; VII. Crimes against religion and conscience, and other offences against good morals; VIII. Indecent exposure, obscene exhibitions, books and prints, and bawdy and other disorderly houses; IX. Lotteries; X. Gaming; XI. Pawnbrokers; and XII. Other injuries to persons.

This Title embodies all the existing law on the various subjects, and the additions thereto by the Commissioners need only to be read to be approved.

Title X—Of crimes against the public health and safety—relates to such offences as nuisances; violation of quarantine laws; mistake of druggists in labeling drugs or putting up prescriptions; setting woods on fire; misconduct, carelessness, or ignorance of engineers, switchmen, etc.; fast driving on highways, and offences of similar character. Many of these provisions are new, but their utility cannot admit of doubt.

Title XI—Of crimes against the publice peace—relating to such crimes as riots, prize fights, disturbance of the peace, and kindred topics.

Title XII—Of crimes against the revenue of the State. This Title is drawn from the present law.

Title XIII—Of crimes against property—relating to such crimes as:

I. Arson; II. Burglary and housebreaking; III. Having possession of burglarious instruments and deadly weapons; IV. Forgery and counterfeiting; V. Larceny; VI. Embezzlement; VII. Extortion; VIII. False personation and cheats; IX. Fraudulently fitting out and destroying vessels; X. Fraudulently keeping possession of wrecked property; XI. Fraudulent destruction of property insured; XII. False weights and measures; XIII. Fraudulent insolvencies by corporations, and other frauds in their management; XIV. Fraudulent issue of documents of title to merchandise; XV. Malicious injuries to railroad bridges, highways, bridges, and telegraphs. The greater part of this Title is the law as it stands at present, made concise, clear, and easy of comprehension. The sections added by the Commissioners cover offences which should be punished, and which preserve symmetry and make the whole more perfect.

Title XIV—Malicious mischief—embracing such offences as poisoning cattle, destroying property of various kinds, opening sealed letters, altering or destroying telegraph messages, etc.

Title XV—Miscellaneous crimes—providing punishments for violations of the game laws, vagrancy, enticing seamen to desert, etc.

Title XVI—General provisions—relating to such subjects as affect foreign conviction or acquittal, contempts, mitigation of punishment in certain cases, removal from office for violation or neglect of duty, attempts to commit crimes, punishment of second offences, etc. One material change from the present law occurs in this Title, in sections six hundred and sixty-six and six hundred and sixty-seven, increasing the punishment of offenders upon a second conviction. It is believed by your committee that its adoption will be of much benefit. The utility of the change is discussed by the Commissioners in a note to section six hundred and sixty-seven of the Code.

These sixteen Titles, together with preliminary provisions, conclude Part I.

Part II—Of Criminal Procedure. The Commission have made very few changes in this portion of their work, and it is the law as it exists. Such subjects as writs of habeas corpus, search warrants, Coroners' inquests, proceedings against fugitives from justice, and kindred subjects, have been placed in their proper places in this Part. Some few sections have been made to conform to decisions of our Courts, and others made to carry out the provisions of sections contained in Part I. The divisions and subjects treated of in this Part are as follows:

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W. W. PENDEGAST, Chairman,
JAMES VAN NESS,
A. COMTE,
JAMES T. FARLEY,
Senate Committee.

C. G. W. FRENCH, Chairman,
F. E. SPENCER,
Assembly Committee.

Joint Committee on Revision.

TRANSACTIONS

OF THE

California State Agricultural Society

DURING THE

YEARS 1870 AND 1871.



SACRAMENTO:
T. A. SPRINGER, STATE PRINTER
1872.

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BIENNIAL REPORT

OF

The State Board of Agriculture,

FOR THE

YEARS 1870 AND 1871.

T. A. SPRINGER.....STATE PRINTER.

REPORT.

To His Excellency, Newton Booth, Governor of California:

Sir:—Since our last biennial report California has experienced two successive seasons of unusual drought. During the rainy season of eighteen hundred and sixty-nine and eighteen hundred and seventy, the entire rainfall in the central portion of the State was only thirteen and fifty-nine one hundredths inches, while in eighteen hundred and seventy and eighteen hundred and seventy-one it was but eight and forty-seven one hundredths inches, making the total rainfall for the two entire rainy seasons a trifle over twenty-two inches, or two and one half inches more than fell during the unprecedented dry seasons of eighteen hundred and sixty-two and eighteen hundred and sixty-three, and eighteen hundred and sixty-three and eighteen hundred and sixty-four, and but little more than the average rainfall for each year for the past twenty-two years.

Notwithstanding these facts, it is a source of congratulation that the agricultural, and indeed all the material interests of the State, have suffered much less during the past two years than they did during the corresponding seasons of eighteen hundred and sixty-two and eighteen hundred and sixty-three, and eighteen hundred and sixty-three and eighteen hundred and sixty-four. Indeed, taking into consideration the progress made in the development of our industries during the past two years, and footing up the results of that progress and of the two years' production, we find abundant reason for general congratulation among the people, and for universal gratitude to Him who visits the earth with both rain and sunshine, and who tempers the winds to the shorn lamb.

LESSONS OF THE DROUGHT OF EIGHTEEN HUNDRED AND SIXTY-THREE AND EIGHTEEN HUNDRED AND SIXTY-FOUR.

These occasional seasons of drought in California are not without valuable lessons—they are accompanied with benefits as well as disadvantages. In eighteen hundred and sixty-three and eighteen hundred and sixty-four the general failure of crops throughout all the central portions of the State, and the great scarcity of grazing and hay for stock, directed general attention to the low land constituting the deltas of our great rivers, and also to the high table lands located well up on

the Coast Range, and the Sierra Nevada Mountains. Those who explored in the latter direction found to their surprise and gratification an abundance of the most nutritive grasses, sufficient to feed all the stock then in California during the entire season. They found there countless valleys waving with excellent bunch grass, and extensive green meadows, furnishing nutritious and plentiful grazing for their flocks and herds, ranging almost to the very summits of the highest Sierras. These extensive high table lands have been the resort of thousands of cattle and sheep every Summer since that date, and have been a most valuable addition to the stock raising resources of the State. Those who turned their steps towards the low tide and swamp lands were scarcely less successful. They found thousands of acres of the most prolific natural meadows of which the world has any history, abounding in wild clover, timothy, and other native grasses. Besides pasturing large numbers of horses, cattle, and sheep during the Summer of eighteen hundred and sixty-four, it was estimated by this Board at that time, and upon reliable data, that there were cut and secured on these meadows, by parties in different portions of the State, not less than fifty thousand tons of a very fair article of hay, and that at least fifty thousand tons more were left standing upon them uncut.

The lessons taught by the dry seasons of eighteen hundred and sixty-three and eighteen hundred and sixty-four have not been forgotten by our people. The discoveries then made have been followed up and rendered available and valuable each year since that time, and now the elevated pasture lands of the mountain districts and the broad, natural meadows of the lowlands around about the confluence of the San Joaquin and Sacramento Rivers are among the most valuable portions of our State. These two great districts have contributed much during the two past dry seasons to lessen the effects of the drought which we, without a knowledge of them, would have experienced. Our farmers have also learned the great value of straw in keeping stock through the Winter season, and many of them have of late years been seeding down portions of their lands to that most excellent grass, alfalfa, so that we are much better prepared for an extreme dry season in the Summer, or an extreme wet and severe one in the Winter, than we were a few years since.

Although our official returns show that we had during the past dry season three times as many acres of land under cultivation in grain and other crops in the State as during the seasons of eighteen hundred and sixty-three and eighteen hundred and sixty-four, more than three times as many head of horses and mules, one-third more cattle, and more than eight times as many sheep and goats, yet the losses of stock from the effects of the drought of the past year were very light compared to the losses sustained in eighteen hundred and sixty-four.

These facts show a most gratifying improvement in the condition of our stock raising industries, and at the same time exhibit in a most striking manner the expansive nature and almost unlimited extent of our stock rais.ng resources when properly understood and husbanded.

While upon this subject, we would urge upon our farmers the great benefits to be derived from a practice of keeping a few head of stock—sheep and cattle—on their farms to eat their grain straw, in preference to burning it, as is still the practice in many portions of the State. This straw, eaten and trampled by the cattle, may be made a source of direct profit to the farmer in furnishing our markets with beef when they are most poorly supplied and when beef commands the highest prices, and

also to contribute to the producing qualities and fertility of his soil, which, however rich now, will, in a few years of constant cropping and no manuring, be reduced to a state of poverty and unproductiveness. We would also earnestly urge the planting of greater breadths of land in alfalfa, and a more general practice of cutting and securing more hay and other food, such as pumpkins, and beets, and carrots, for feeding stock during the wet seasons. More barns and sheds, also, for the shelter of stock from the severity of storms during these seasons, are needed in all portions of the State, and money invested in this way will never be regretted. We think the experience of many during the present season has been such as to attest the correctness of the above recommendations.

AGRICULTURAL EXPANSION AND IMPROVEMENTS.

Not only have we during the past seven years developed stock raising resources heretofore unknown, and greatly improved the condition of that interest, while we have been adding rapidly to the number of our herds and flocks, but we have made even greater developments and improvements in the general horticultural and agricultural industries of the country. We have expanded, extended, and diversified our agriculture in a most gratifying manner. Had the drought of eighteen hundred and seventy-one found our agricultural operations confined almost exclusively to the most accessible and easiest cultivated valley lands of the State, as did the drought of eighteen hundred and sixty-four, and had we confined our efforts to the cultivation of the limited number of agricultural products to which our exertions were at that time principally devoted, the condition of our agriculture to-day, and indeed of our industries generally, must have been anything but gratifying. Step by step and year by year we have been learning that California, which we at first supposed was valuable only as a mining State, possesses a greater diversity of superior agricultural and horticultural advantages than any other State in the Union, and we think without boasting we may truly say, than any other equal portion of the earth's surface. In the earlier years of the State's history the cultivation of the soil was confined to the immediate river bottoms, and a few of the commonest vegetables and a little barley constituted the entire list of agricultural products it was deemed possible to grow or safe to experiment with, and fruit culture was confined to a few supposed favored localities immediately surrounding some of the old Missions in the southern portions of the State, and the varieties of fruit cultivated were exceedingly limited.

The immense plains constituting the next more elevated table of lands back from the rivers and stretching off towards the foothills in either direction, covered as they were each succeeding Summer with a luxuriant growth of wild oats, standing from four to eight feet high, and so thick on the ground that a man on horseback could scarcely force his way through them, were in those days considered of no value except as ranges for the countless bands of wild mustangs and wild horned, high hipped Spanish cattle that roamed over them. A few isolated, and in those days considered useless and foolhardy experiments were made with this class of lands by the cultivation of wheat and barley. Unexpected and gratifying success attended the timid experiments. The world knows the result. California wheat has revolutionized the grain markets of the world, as California gold has her commercial routes and money exchanges.

In the meantime California agriculture has continued gradually to expand and diversify; first stretching out over the next higher table of red lands, and then creeping slowly but cautiously and surely up the sides of the foothills, until we now find her luxuriating in the elevated valleys and spanning the mountain sides of the Sierras and Coast Ranges from the extreme north to the extreme southern end of the State. She is also extending her arms seaward, and embracing and reclaiming the islands and tide lands in and about our inland fresh water bays. And both on the hills and in the low lands during the past dry season have all kinds of crops done much better than in the open valleys.

DIVERSITY OF PRODUCTS.

Our products, instead of being confined to a few of the more necessary staples of life, have been cautiously and slowly, but surely and profitably, multiplying, until we now cultivate in greater or less abundance and perfection nearly every article of necessity or luxury that is grown from the earth within the temperate and tropical zones. We excel France and Italy in their vineyards and mulberry orchards, and equal them in the products of these orchards: wines, brandies, raisins, and silk cocoons. We are already competing with Germany and Austria in the cultivation of their greatest and most profitable products, beet sugar, and will soon be able to supply not only our own demand for this article but the entire demand of our sister States as well. From the success of experiments recently made in the cultivation of tea and coffee we have reason to hope the day is not far distant when we shall be able to cope with China and Japan in the production of the former, and with the islands of the Indian Ocean in the cultivation of the latter of these luxuries of the world. The cultivation of rice to a limited extent has been attended with such perfect success on some of our swamp and tide lands as to warrant the belief that this valuable staple can be grown here in quality equal to the best produced in the Carolinas themselves, and limited only by the hundreds of thousands of acres of these lands within our borders.

Cotton and the ramie plant have both been so successfully cultivated in the State within the past few years that there can no longer be entertained any doubt that we shall soon be able to excel in the production of the former of these vegetable fibres the best cotton districts of the Southern Atlantic States, and dispute with China and the Asiatic islands the monopoly they have so long sustained in the cultivation of the latter.

New Zealand flax-hemp and common flax-hemp have also been successfully cultivated here in various portions of the State; and while the latter is grown very extensively and profitably for the seed, the time when all will be extensively cultivated for their fibres is only delayed for want of proper manufacturing facilities to render those fibres available.

It has long since been proven that the best tobacco lands of Virginia cannot outdo us in the production of this article in quantity; and by the perseverance and skill of a citizen of our State it has this year been successfully demonstrated that we can equal if not excel her in quality.

At our last State Fair were shown some samples of opium which, upon being tested by some of our most skillful chemists and physicians, were pronounced equal to the best imported article, and we are assured

by the exhibitors that its production in quantity at the prices it commands may be made very satisfactorily profitable.

The cultivation of the castor bean and the manufacture of the oil is becoming a permanent and remunerative business in some portions of the State; Yuba County alone having grown the last year over six hundred thousand pounds of beans, while the product of the State was over seven hundred thousand pounds. This, at four cents a pound to the producers, paid them twenty-eight thousand dollars. There is no reason why we should not extend this business and become large exporters of the oil, as nearly all portions of the State are equally well adapted to raising the bean.

The cultivation and preparation of chickory has also been successfully carried on in Yolo County for a number of years past, by a company of Germans, and is growing into a business of no little importance. The product of the firm the last year was one hundred and thirty-five tons, valued at twenty thousand dollars. Other counties are also engaging in the business to some extent—five thousand dollars' worth having been grown and prepared in San Joaquin the past season. The soil of all our river bottoms of a sandy loam is well adapted to this product, and it can therefore be extended almost without limit, as its demand for commerce is coequal with that of coffee, with which and as a substitute for which it is used.

English mustard is being produced in some of the southern counties quite extensively, Monterey alone having produced the last year nearly thirteen thousand bushels, valued at over twenty thousand dollars, while in Santa Barbara there was gathered forty thousand dollars worth of wild mustard seed, and in other counties a considerable quantity, swelling the value of the product of the latter variety alone in the State to the sum of sixty thousand dollars.

The value of the broomcorn crop for eighteen hundred and seventy, produced principally in the Counties of Yuba, Sutter, and Amador was over forty-five thousand dollars.

FRUITS.

As to the production of fruits and nuts, both of the temperate and tropical climates, there is probably no other equal area of the earth's surface, embraced in a single body or laying together, that can excel or equal our State in the number of kinds or general good qualities of the varieties produced. A careful comparison of the apple grown in the elevated foothills of our State with the same varieties exhibited at our last State Fair from the States east of the Rocky Mountains, ranging from Massachusetts to Kansas, proved most conclusively that for general good qualities of flavor and keeping, our fruit is equal to the best, and in size, form, and color, and general inviting appearance, is far superior to any. While the apples from all the other States show the effects of the ravages of insects more or less and in one way or another, ours are perfectly free from all damage or imperfections caused by these fruit pests. The extremes of our climate, from the warm valleys of the coast foothills to the high altitudes of the Sierras at which apples are cultivated successfully, are so great that with a little care in selecting varieties, and in preparations for keeping this most valuable of fruits, we may have our markets supplied with fresh apples the year round. Our peaches, plums, prunes, figs, apricots, nectarines, cherries, strawberries, blackberries, raspberries, and gooseberries are universally admired and

highly relished by all who visit our State during the fruit season, while the superiority of our pears and grapes has created a market for them everywhere, limited only by the means of transportation and the distance to which they can be conveyed in good condition.

Of the tropical fruits, we have for years and almost centuries at some of the old Missions in the southern portion of the State, been producing oranges, lemons, limes, and olives, and they are now becoming almost as common in the orchards of those localities as apples, pears, and plums, and are found in the markets of all the principal towns of the State, and are preferred to any grown elsewhere and imported. Nor are these delicious fruits confined to the south, but are being grown successfully in all parts of the State as far north as Butte County, and all along the foothills on either border of the great central valleys.

In many of the southern counties successful experiments are being made with other valuable varieties of tropical fruits and exotics. The pineapple, the banana, the mango, the cocoanut, the plantain, the loquat, the Chinese guava, yellow jambe, the date, and some other highly prized varieties of fruit, have been perfected in the open air in this portion of the State. As it is an important fact that many of the most valuable fruits and berries now cultivated extensively in the United States are natives of a more mild climate than that in which they are found to do the best, we feel warranted in recommending continued efforts in the cultivation of the above named fruits and in the introduction of other valuable kinds from the tropical countries.

STOCK.

In stock, our California bred horses are proving superior in speed, endurance, and general good qualities to the best raised in the Atlantic States or Europe. The policy of our State and District Agricultural Societies, in giving valuable purses to bring out the speed and bottom of young and untried horses of all breeds and classes, is having a most beneficial effect in the development of the most desirable and valuable qualities of this noble animal.

As the highest value of the horse is measured by his speed performances, and as his ability in this direction depends as a general proposition upon the judicious crossing of the best blood and highest type of nerve and muscle, and as this happy union of qualities can only be determined by severe and actual test on the track or road, it is of the highest importance to those who make the breeding of horses a business for profit that some perfectly unbiassed and fair system for the trial of the speed and endurance of young horses should be inaugurated.

The Agricultural Societies of this State, recognizing the development of the best and most valuable qualities of the horse as much a part of their duties as the improvement of cattle for the production of beef or butter and cheese, or of sheep for the production of wool and mutton, have undertaken to inaugurate a system by which these valuable qualities may be honestly and thoroughly tested. Their efforts in this direction have been so generally successful that millions of dollars have been added to the value of the horses of this State, while at the same time most valuable lessons in breeding have been inculcated. If it is better to double the intrinsic and serviceable value of our horses than to double their numbers without increasing their value, then this action of our Agricultural Societies is commendable.

Our short horned cattle, born and bred here, excel their foreign bred

and imported ancestors, insomuch that they are coming in demand for export to improve the original stock in the countries from which they are derived.

Our fine wooled merino sheep suffer no depreciation when compared with the best flocks of Germany or France, and their fleeces are as much sought after by manufacturers of fine cloths as the best clips of Spain or Australia.

Our Cashmere and Angora goats become more vigorous and hardy than in their native countries, and their fine silky fleeces of mohair keep pace with the improvement of the animals themselves.

In such an expansion of our agriculture and such an improvement in its diversification and condition as we have made since the drought of eighteen hundred and sixty-four, is to be found the principal reason why under the influence of an almost equal drought of eighteen hundred and seventy-one, all our industries have suffered so much less than they did at that time.

THE WORK OF THE STATE AGRICULTURAL SOCIETY.

All this expansion, all these improvements in the modes of culture and in the diversification of crops, in the introduction of better breeds of stock and new and better varieties of fruit, is more or less due to the exertions of the State Agricultural Society, working through its annual Fairs, reports, and transactions, and its extensive correspondence. There has not been an advance step taken by our agriculturists, either towards the foothills and up the mountain sides, or down the rivers to the islands and tide lands, that the State Agricultural Society has not pioneered the way and faithfully and truthfully pointed out the advantages and disadvantages of the new enterprise about to be undertaken.

THE SOCIETY'S ANNUAL FAIRS.

At these annual Fairs have been collected together yearly in one view the many rich products of the varied soils and climates of our mountains and valleys, of our sea coasts, tule and swamp lands and river borders, affording our farmers, horticulturists, and stock breeders rare opportunities for observing the advantages of each particular location, the peculiar products to which its soil and climate are best adapted, of comparing notes, interchanging of experiences and opinions, and obtaining useful hints and valuable information for their future benefit and guidance.

At these Fairs the stock breeder, in whatever class, has presented to him invaluable lessons in breeding, feeding, and managing stock. He sees at these annual gatherings of the society the plump, long bodied, short legged, and deep hammed Berkshire; the fine haired, small headed, short faced, and more delicately formed Suffolk and Essex breeds; the thickset, easily kept, and easily fatted China pig, and many other distinct varieties of swine, and determines for himself the breed or cross best adapted for his locality and circumstances. He beholds the fine wooled, closely made, compact Spanish merino; the medium sized, square quartered, middle wooled, mutton bearing Southdown; the large, heavy built, strong boned, and long wooled Cotswolds, and other pure breeds and crosses of sheep, and by inquiry and observation learns all about

their points and habits, and buys of this or that distinct breed or cross, to suit his particular location and purpose. He is here made acquainted with the majestically made, broad, straight backed, deep chested, velvet coated, short horned, beef making Durham; the more delicately formed, thin necked, milk giving Ayrshires and Herefords; the wiry and hardy looking, symmetrically formed, domesticated, butter making Jerseys and Devons; and selects the breed or cross adapted to beef raising, milk selling, or butter and cheese making, according as the one or the other business is most agreeable to his inclinations or profitable for his particular location or circumstances.

Here also are displayed before him the different breeds and crosses of the horse, from the beautiful, peerless, clean, long legged, fleet footed, deep chested, silken coated, high mettled, and long winded thoroughbred, to the heavy quartered, thickset, round bodied, square, wide shouldered, heavy legged, long coated English draft horse. He sees here illustrated and exemplified the great benefits and improvements brought about by judicious, skillful, and scientific breeding and careful crossing, and a long continued and sytematic exercise and training, for the development of speed and endurance on the one hand, or on the other for the attainment of great strength and power, and slow but heavy service and easy keeping.

He goes home and applies the lessons of the Fair to practice among his own stock, and by careful thought and close observation discovers new and valuable points or principles; and following up the new train of thought and action to which the Fair has introduced him, in a few years he becomes a prosperous stock owner and breeder, a benefit to himself, his neighbors, and the State. Indeed, all classes of our people annually attend the State Fairs, and they are becoming to all a source of pastime and pleasure and a means of universal improvement.

The enterprising mechanic, the ingenious artisan, the skillful inventor, the tasteful artist, the profound professional man, all here find food for reflection and useful lessons for improvement, each in his own particular calling or occupation.

THE REPORTS OF THE SOCIETY.

These biennial publications made by order of the Legislature are intended to be a true record of the industrial advancement of the State, and at the same time it is their aim and object to lead and direct these industries. In the effort to accomplish this important work, it has been found expedient to make up in as concise a form as possible the full transactions of the society for each year, including a record of the new products introduced, new modes of culture adopted, and new facts brought to light in each and every department of industry in the State. Also, to show the many advantages our State presents to the industrious immigrant who is seeking a new and permanent home, where he may accumulate about him the conveniences and comforts of life with the least labor and exertion.

These books are distributed free of charge to all members of the society and to all other applicants throughout the State, and it is believed such distribution has accomplished much good in stimulating and directing in a profitable channel the energies of our people. They are also sent in exchange to all other similar societies in the United States and in many of the European counties, and to public libraries and private individuals who apply for them; and in this way we have abundant proof

that they are accomplishing a valuable work in the interest of immigration by spreading information and attracting attention to our valuable resources.

We would here suggest that a great amount of valuable information is annually collected through the channels open to the society for an annual publication, instead of a biennial one, and that such annual publication would be of but little additional expense to the State compared to the increased benefits that would result therefrom. Nearly all the State societies of the Atlantic States issue annual publications, as does also the Agricultural Department of the General Government; and certainly there are many more and stronger reasons why our society should do so than can be urged in favor of the practice in the old Eastern States. In those States the systems of conducting all agricultural operations have been reduced to a science or art by a series of experiences handed down from father to son through many generations, until it would seem but little more was to be learned. They are not seeking to add to their already crowded population by offering inducements to immigrants to settle among them, and yet they keep up their annual publications and consider the money thus used well spent. Although we have in a few years made great improvements and advancement in the development of our agricultural resources, and learned much that will be of great value to us in the future, yet we have but just begun to read the great book of knowledge upon this subject which the future will open to us. We have abundant undeveloped resources, and but a very few people, comparatively, to develop them. An increase of population of the active, working, intelligent kind, is one of our greatest necessities, and there is no more effectual or economical way of securing that class of immigration than by publishing and advertising to the world, and particularly to the class we want, the many advantages we offer them. It is from this class of people we receive the most frequent inquiries, and it is found that the most satisfactory manner of answering such inquiries so as to produce a favorable impression and action is to send in answer a late volume of the society's transactions. But when such transactions are published but once in two years much of the matter contained in any particular volume must of necessity have been collated from one to two years before publication, and if the volume is two years old at the time of sending them, such matter would be four years old at the time of using it in answer to a present inquiry. The absurdity of such a slow process of publishing to the world our rapidly developing and as rapidly increasing resources and advantages must be apparent to every one who has the true interests of our State at heart, and who will give this subject a moment's thought.

In this connection we will mention that we have already received numerous orders for the forthcoming transactions, one of which is for a thousand volumes for distribution by the California Immigrant Union. As this volume contains more than an ordinary amount of valuable statistical information gathered from various public and private sources, and an unusual number of able and exhaustive essays on various agricultural subjects of great present interest, some of which, to render them more valuable and practical, require to be illustrated by wood cuts, we would recommend the printing of at least five thousand volumes, and that provision be made for procuring the necessary cuts for illustration. We would also recommend that provision be made by the present Legislature for the annual publication hereafter of the society's transactions.

CORRESPONDENCE.

The correspondence of the society is annually increasing, both with our own citizens and District and County Societies and Farmers' Clubs and with similar societies in other States of the Union and foreign countries. This correspondence embraces every conceivable subject relating to the multitudinous industries of the earth. To answer all inquiries in a reliable and satisfactory manner the Board regard as one of the important objects of the organization of the society, and have always made it one of the leading duties of their Secretary to cultivate correspondence wherein information can be obtained or imparted. Carrying out this idea, our Corresponding Secretary early last Spring opened a correspondence with the State Agricultural and Horticultural Societies of nearly all the Atlantic States, with a view to bringing about an exchange of products, particularly fruit, for exhibition at the Fairs of the several societies to be held during the Fall months. Many of the societies addressed responded favorably to the proposition, and the result was that at one Fair we had on exhibition fruit—principally pears and apples—from Massachusetts, Connecticut, New York, Virginia, Michigan, Illinois, Indiana, Iowa, Kentucky, Wisconsin, Minnesota, Kansas, and Nebraska. This exhibition of fruit from so many of the States formerly the homes of so many of our citizens constituted one of the most interesting and instructive features of our Fair. It afforded our people an opportunity of comparing directly the fruit grown in their old homes with that grown in the homes of their adoption. And although in the recollections of younger years and of childhood to many of our people the Eastern fruit had been painted with brighter colors and relieved with more delicate tints, and although in such recollections more agreeable flavors and pleasant acids had been attributed to it, yet when these fruits were brought in direct contact with those grown in our own State, when the eye could behold and the taste compare, these impressions of a former day were quickly dispelled, and the almost universal verdict was in favor of our California grown fruit. Some of the Eastern apples were pronounced better than some of ours; but as to pears, ours were incomparably better than any others exhibited.

Our fruits—principally apples, pears, and grapes—were also sent East and exhibited at the Fairs of most of the States above named, and at the Fair of the American Pomological Society, held at Richmond, Virginia, and attracted the universal attention of the people in attendance, and the very general comment of the Eastern press. The verdict by the Eastern people and press was generally more favorable to our fruit than that of our own. Our pears and grapes were natural wonders. It required very positive assurance to convince many intelligent people that our grapes were not grown under glass. At the Fair of the American Pomological Society our State was most highly complimented, and at a banquet given by the City of Richmond to the delegates in attendance the following sentiment was unanimously approved: "California—the real or modern Hesperides. Her fruit trees and vines, with their roots in a golden soil, bear a golden fruitage."

We have every reason to believe that by this exchange of fruits with these Eastern societies many advantages will result to our State, by attracting to it the attention of people who will be induced sooner or later to make it their permanent homes.

As another result of a well directed correspondence, there were exhibited at our last State Fair many of the industrial products of China and Japan, and a number of Commissioners from the Japanese Government, including a Special Commissioner of Agriculture, attended the Fair in person, with an American as interpreter and agent. These Commissioners were well pleased with our exhibition, and with the evidences of agricultural life and prosperity generally. Among the first visible fruits of this courtesy shown these people we may mention the fact that a number of fine merino sheep and good blooded cattle have been purchased by the Japanese and shipped to their own country, and that some of the most intelligent and wealthy young men of Japan have been sent out to this State for the purpose of learning practically the stock raising business, and becoming familiar with our system of agriculture generally; that a large number of fruit trees of various kinds have already been ordered from our nurserymen for the Japanese market for the present season, and that the prospect now is good that Japan will very soon become one of our best customers for our best blooded horses, cattle, and sheep, and for a large amount of our nursery products, garden and field seeds, agricultural implements, etc.

PRACTICAL FIGURES.

We have been stating in general terms the adaptability of our climate to an almost endless variety of valuable products, and the wonderful fertility of our soil. To show that we have not overstated facts, we will here introduce a few practical figures derived from reliable official sources.

By a careful estimate of the value of the agricultural products of our State for the year eighteen hundred and seventy—a year of drought—as returned by the County Assessors to the Surveyor General, we find that value to be in round numbers sixty millions of dollars. Feeling a little in doubt about the correctness of our figures, we asked the United States Marshal for this State for the agricultural statistics of the State as obtained through his census agents. His answer and table of statistics very kindly furnished will be found in the papers accompanying this report, and by them it will be seen that his estimate is identical with our own. By the same returns the number of acres under cultivation for that year was two million five hundred and ninety-six thousand six hundred and twelve, which being divided into the sixty million of dollars—the whole product value—gives as a result twenty-three dollars and ten cents the value of the product of each acre cultivated. We would here state that this estimate of value is not based on export prices, but on the prices actually obtained by producers that year.

Again: by the returns of the Census Agent there were under cultivation that year twenty-three thousand three hundred and seventy-five separate farms. Allowing each farm to have a separate owner or proprietor, we have twenty-three thousand three hundred and seventy-five farmers, or joint proprietors and cultivators of the soil. If we divide the sixty millions of dollars equally between this number of proprietors, each will have received as his gross profits two thousand and fifty-six dollars and seventy cents.

AGRICULTURAL PRODUCTS OF EIGHTEEN HUNDRED AND SEVENTY-ONE.

Owing to the extreme drought the past year, it is probable that the

aggregate agricultural product of eighteen hundred and seventy-one was somewhat less than in eighteen hundred and seventy, but in consequence of the higher prices obtained for most of these products it is estimated that the total value of the year's crop was not much less than in eighteen hundred and seventy. For instance: more fruit has been exported this year than ever before, and much more money has been realized for the crop. The wine crop was fully equal in quantity to that of eighteen hundred and seventy—estimated at three millions of gallons—and much better in quality, and a decided improvement in prices has been obtained, giving to the producer a larger return. Again: the wool product of eighteen hundred and seventy-one was in round numbers twenty-five millions of pounds, against nineteen million four hundred and seventy-two thousand six hundred and sixty pounds for eighteen hundred and seventy, being an increase of five million five hundred and twenty-seven thousand three hundred and forty pounds, or a little less than twenty-nine per cent. While the average price paid to producers in eighteen hundred and seventy-one was about twenty-seven and one half cents per pound, that paid in eighteen hundred and seventy was only nineteen cents per pound; so that while the product of eighteen hundred and seventy brought the producers three million six hundred and ninety-nine thousand three hundred and five dollars, the product of eighteen hundred and seventy-one brought them about six million eight hundred and seventy-five thousand dollars, or over fifty per cent increase.

We doubt whether another State in the Union can make as good a showing of agricultural products and values under such disadvantageous circumstances.

INCUMBRANCES TO THE STATE'S PROSPERITY.

While it is a source of just pride and gratification thus to review the achievements of the past, we cannot close our eyes to the fact that our State in every stage of her industrial history has labored under many disadvantages. While some of these have disappeared by the lapse of time, and others have been removed by the Acts of the Legislature and the decisions of the Courts, others still, of a serious and threatening nature, remain to retard her progress in the way of material prosperity. With eighty million of acres of tillable land within our borders, and as we have seen of the most fertile and productive character, we are actually cultivating less than three million acres; and the total population of the State is but five hundred and sixty thousand two hundred and twenty-three persons. To make this picture still worse for the prospect of a general development of our agricultural resources, upon which our prosperity mainly depends, over one fourth of this entire population, or one hundred and forty-nine thousand four hundred and seventy-three, are residents of one city—San Francisco—and nearly one half, or two hundred and forty-nine thousand seven hundred and thirty-eight, are residents of twenty-four of our larger cities and towns, leaving but three hundred and ten thousand four hundred and eighty-five as residents of the smaller towns throughout the mining and rural districts of the State, and actual occupants of the soil. In view of these facts it is probable that our estimate of twenty-three thousand three hundred and seventy-five as the actual owners and cultivators of farms in the State, is rather above than below the truth. Why this scarcity of population in the rural districts? Why so few farmers in a State possessed of such

vast quantities of unoccupied and uncultivated fertile lands and a climate not excelled in the world? Does not farming pay here? There is no place in the world where the average farmer does better, as we have shown above, than in California. Is it not an agreeable and easy country to farm in? There is no country on earth where the farmer can accomplish so much with so little labor. We have no snow, no cold, freezing Winter seasons, lasting from four to six months every year, during which the farmer is kept hard at work to provide the necessary firewood to keep his household comfortable, and in housing and feeding his stock, the hay and grain to secure and preserve which he has been compelled to labor hard the previous six months of the year. We have here but two seasons—the rainy season or seed time, and the dry season or harvest. As a general thing there is not over forty days in the entire year in which the farmer cannot without any inconvenience work in the field; and we are warranted by facts in saying that the judicious and economical general farmer can, in California, on say fifty acres of land, and with his own individual labor and a single team, raise and market more than twice the amount of general agricultural products, and at double the net profits, as he could in the State of New York or any of the Northern Atlantic States.

If in addition to such a favorable showing of natural advantages for California we could go forth and publish to the world another very important fact, that we have within our borders from thirty million to forty million acres of land equally as fertile and valuable and as favorably located as much of that which is now under cultivation, and that all this land was open to purchase in lots of from eighty to one hundred and sixty acres each, and at the Government price of one dollar and twenty-five cents per acre, we are satisfied it would not be three years before our State would contain half a million of the happiest and most prosperous agriculturists in the world, engaged in the cultivation of all the various agricultural and horticultural products to which our soil and climate are so well adapted. Then the idlers in our towns and cities would seek and find constant and profitable employment in the country, or would themselves become proprietors and independent cultivators of farms and useful and valuable members of the community. Then our valuable water privileges, of which we have more than all New England combined, would be occupied and utilized, and the ring of the anvil and hum of the spindle would be heard all over the State. Then, too, would come commerce, and natural and permanent prosperity would return to the cities.

LAND MONOPOLIES.

But what is the position of the millions of acres of uncultivated lands throughout the State? Why are they uncultivated and unproductive? Is it true that these lands are monopolized by individuals and held in large bodies, of but little profit to their owners, and at such immeasurable disadvantage to the State? What are the facts? By reference to some statistics collected by the State Board of Equalization for the illustration of another subject, we find that in the County of Colusa there were assessed, in the year eighteen hundred and seventy-one, to six different ownerships, one hundred and sixteen thousand six hundred and forty-seven acres of land; in the County of Tehama, to five different ownerships, forty-eight thousand seven hundred and ten acres; in the County of Butte, to five ownerships, sixty-four thousand three hundred and fifty-six acres; in the County of Monterey, to eight ownerships, one

hundred and twenty-two thousand three hundred and forty-three acres; in the County of San Luis Obispo, to eleven ownerships, two hundred and fifty-one thousand two hundred and sixty-six acres; in the County of Santa Barbara, to thirteen ownerships, four hundred and ten thousand nine hundred and seventy-three acres; in the County of San Diego, to seven ownerships, two hundred and eight thousand seven hundred and fifty acres; in Kern County, to nine ownerships, three hundred and five thousand five hundred and forty-two acres; in Fresno County, to seven ownerships, two hundred and eighty thousand six hundred and eighteen acres; in Merced County, to seventeen ownerships, five hundred and eleven thousand three hundred and six acres; and in San Joaquin County, to thirteen ownerships, three million one hundred and thirty-five thousand acres.

Thus in eleven counties of this State, statistics collected by this Board, not with a view of showing the large ownerships of land, but for another object entirely, develop the astonishing fact that one hundred proprietorships own and control five million four hundred and sixty-five thousand two hundred and six acres of land, or an average of fifty-four thousand six hundred and fifty-two acres each. This is three million eight hundred and sixty-eight thousand five hundred and ninety-four acres more land than the whole amount under cultivation in eighteen hundred and seventy, when the agricultural product of the State was valued at sixty million dollars. Divide these possessions of these one hundred proprietorships into farms of one hundred and sixty acres each, and they would make thirty-four thousand one hundred and fifty-seven farms. Let these farms be occupied each by a family of five persons, and there would be added to our rural population and producing classes one hundred and seventy thousand seven hundred and eighty-five persons.

If each one of these farms was cultivated and made to produce at the same rate per acre that our land under cultivation in eighteen hundred and seventy did produce, the additional value to our annual agricultural products would be one hundred and thirty-one million one hundred and sixty-four thousand nine hundred and forty-four dollars, or very nearly this sum, as they are now made to produce but very little to their owners. This last sum would also be about the measure of the permanent annual addition to the taxable property of the State. Again: this land is now assessed, as stated by the Board of Equalization, at about an average of two dollars per acre. If divided into farms as supposed, it would at least add ten dollars an acre to its annual assessed value, and thus would add fifty-four million six hundred and fifty-two thousand and sixty dollars to the permanent wealth and taxable property of the State. These lands have cost their owners on an average from one dollar to one dollar and twenty-five cents per acre, and are now, a very large portion of them at least, for sale in lots to suit purchasers at an advance figure, though at a very low or moderate price in comparison to their real value—say from two dollars to eight dollars per acre, according to quality and location. What we have stated in regard to large ownerships of land in the counties named, is to a certain extent true of all the counties in the State. It is also true that the Central Pacific Railroad Company own some three million acres of land in the State, granted to them by the General Government in aid of the great enterprises which they have undertaken and accomplished. The lands of this company are also for sale in lots to suit purchasers, and at about the same rates per acre as those of the private parties to which we have

referred. These, then, are the facts, that very nearly all the lands in the State have, in one way or another, passed from the ownership of the Government to that of private parties, and that the prices of these lands are advanced considerably above the Government prices for public lands in this and in other States. These are the facts, and this is the length and breadth of the land monopoly in California. These are the present facts with which we as a people, and with which the State of California have to deal. It is unnecessary now to complain of the legislation that opened the way to this state of things. It is a fruitless labor to inquire into the management of our State and National Land Offices, which has encouraged the accumulation of these lands in a few hands and in large bodies, rather than in the hands of small farmers, except to prevent the continuance of such management. We have to deal with this question as it now exists, and the best way is to look at it in a practical common sense manner. It interests the people and the State now mostly and almost wholly as it relates to and has an immediate bearing upon another question of great importance—the question of

IMMIGRATION.

There seems to be a universal opinion in California that the increase of population by the introduction of an industrious, working, thriving people, would add greatly to the general prosperity of the State. This opinion we believe to be well founded, and that it is to the general interest of all as well as the duty of all to encourage the immigration to our State of that class of people.

Does the fact that the millions of uncultivated but rich and fertile lands of the State belong to individuals instead of the General and State Governments, change this general interest and this general duty of our people? Both the General Government and the State have sold their respective portions of these lands, and have received the full price demanded for them, so that we as a people have no longer any direct interest in these lands or in their ownership. But we have an interest, and a vital one, in their cultivation and improvement, and in the additional wealth and prosperity we have shown such cultivation and improvement will bring to the State.

Will the fact that the sale of these lands at advanced rates over the Government prices brings riches and wealth to some of our enterprising citizens injure any of us as individuals, or detract from the great benefits that will thus accrue to us as a people or State? On the contrary, will not the wealth of these individual citizens add so much to the general wealth and taxable property of the State? Will it not be equivalent, indeed, to just so much additional capital put in circulation among us, to develop our latent resources and add to our general prosperity? Who, then, will be wronged by the encouragement of such immigration, even at the expense of some of the public revenue? Will not all the lands within the State the title of which is in individuals be compelled to bear their portion of such expense? Most certainly they will. If, however, these titles were still in the General Government and State, they would be exempt from taxation for the purposes of encouraging immigration, as well as for all other purposes. Then, so far as our people or State is concerned, is it not rather a benefit and advantage than an injury that these lands are private property, and

consequently liable to bear a portion of the expenses of the State Government, as well as any outlay for the encouragement of immigration to settle up and bring additional wealth and capital into the State?

If it be objected that these lands are not honestly or proportionally assessed and taxed, this is another and separate question, and one that may be remedied. Let the State remedy the objection, and see to it that they are properly and proportionally assessed and compelled to pay taxes on every dollar of their "full cash value," the same as other property. Nor should their owners complain at this, or even at a proportionally high assessment and taxation, while a portion of the funds realized from such taxation is appropriated to encourage immigration, and thus bring to them a greater than an equal share of the benefits of such immigration by furnishing them customers for their lands and enhancing their value. It is true that these lands are held at higher rates than Government lands in other States, and that it will cost immigrants more to obtain lands here than where they can buy at the Government prices. But we would remind the intelligent immigrant that the lowest priced article, even in land, is not always the cheapest. The agricultural lands of California, as a general thing, are all ready for the plow. No clearing of heavy timber is required, no obstruction whatever to immediate cultivation is presented. And, as we have shown, California is one of the most favorable countries in the world for the poor farmer to get a start in. We have proved by official statistics that the average product of all the land under cultivation in eighteen hundred and seventy, a year of drought, brought to the producers the handsome sum of twenty-three dollars and ten cents per acre. Well may we ask, where can the industrious immigrant, rich or poor, do better? Where can he do half as well? There is no difficulty here in obtaining any quantity of land on most favorable terms as to time. With the proceeds of the first crop produced and sold within a year from the time of purchase, many a man has paid for his farm and bought as much more land, or built a comfortable farm house and barn; and the opportunities for doing just as well by any enterprising farmer are almost without number in all portions of the State. It is true that a considerable portion of the lands now for sale at very low rates, say two dollars per acre, are not considered of the best quality for the production of cereals, but are well adapted to vineyards, silk and fruit culture of all kinds, and when brought under cultivation in these specialties, never fail of a crop. In this connection we will state it as a historical fact, that since the first introduction of the vine into the State, at the first settlement of our old Missions, there never has been a failure in the grape crop, nor has the fruit crop ever failed in the State. These very lands that can now be had at two dollars per acre will return a greater profit to the skillful and economical manager than lands in France or Italy, or other European countries, or in any of the Atlantic States, held at from one hundred dollars to three hundred dollars per acre, if devoted to wine, silk, raisin, or general fruit and nut culture.

It is also equally true that much of this land that can be had at from five to ten dollars per acre is equally as valuable for the production of the cereals as lands now under cultivation in these grains, and from which the owners realized this season from thirty dollars to forty dollars per acre. Again, there are already railroads projected and being built through almost every section of the State in which any of these lands are located, so that markets for everything produced will soon be or are now within easy distance. General plans for irrigation

are also being adopted and pushed forward to completion, thus placing the certainty of water within the control of every cultivator, and rendering a crop of any kind beyond the possibility of failure. On the whole, we are well satisfied that no other State in the American Union presents greater inducements or more certain prosperity to the enterprising, skillful, and economical immigrant than does California. We are also well satisfied that whoever persists in publishing to the world the darkest side of our condition in California is not only injuring the best interests of the people and the State, but is also doing a great injury to those who would otherwise come and make their homes among us and enjoy the unequaled advantages and prosperity that here awaits them.

THE FENCE QUESTION.

There is perhaps no subject at present undergoing more earnest discussion in the agricultural communities of the State than the laws regulating the building of fences. If the general expression of the press be a true indication of the wishes of the people, we must conclude that there is a pretty general disposition to abandon the system of laws and customs that have heretofore prevailed in this country and State, and adopt the European system in regard to the protection of growing crops. While it is the province and desire of the Board of Agriculture to extend to all the industries of the State a fostering care and equal protection and encouragement, we cannot ignore the many considerations urged in favor of the change proposed. If it be found upon an unbiassed examination of this subject that such a change will bring greater benefits to the greater interests, or the greater good to the greater number of our people, without inflicting severe wrong or hardship on other interests, then the sooner the change be made the better. It is a contest between two classes of property—in general terms, grain and cattle. It is claimed by the owners of the former that as grain or growing crops of all kinds are passive and cattle are aggressive, that the natural rights of property and the equities regulating the management and relations of the same, as well as the moral obligations of the owners, would require that the latter should be restrained from committing depredations on the former, and that whatever expense is necessarily incurred in furnishing the means of such restraint, such expense should be borne by the owners of the latter, and consequently that all laws founded upon a different principle should be repealed, and that laws recognizing this position should be enacted and enforced.

RELATIVE PROPERTY CONSIDERATIONS.

As we have before stated in this report the returns of the County Assessors and the census reports fix the value of the agricultural products of the State for the year eighteen hundred and seventy, including grain, roots, and wine, and excluding fruits, at sixty million dollars. By the same returns, the whole number of grape vines and fruit trees of various kinds in the State is thirty million nine hundred and ten thousand and forty-six. Valuing these at one dollar each—and this is certainly below their real value—and discarding the odd thousands for convenience, we have an additional property of thirty million dollars—making ninety million dollars' worth of growing crops and property requiring protection from the ravages of the stock of the State.

Now, taking the whole number of horses, cattle, sheep, and goats in

the State (leaving out the hogs, because the principle is already recognized and enforced by the present laws as regards them) and placing their value at their market prices, and we have the total of that value in round numbers—thirty million dollars—or just one third the total value of the other agricultural products or growing crops.

Here, then, we have among us thirty million dollars of aggressive property and ninety million dollars of passive, owned to a great extent by different parties. If the former are allowed to roam and seek their living without restraint the latter will necessarily, to a great extent, be destroyed; and the question arises upon which class of property or upon which set of owners shall the expense of such necessary restraint be placed? Not taking into account the amounts or values of the different classes, and only considering their nature, a disinterested umpire would naturally say the expense must be paid by the cattle or their owners.

Again, in all associations of property for the general gain—incorporated companies for instance—the greater number of shares or the majority in value controls and manages the whole interest, and that control and management is uniformly one of the conditions of the associations. Why should not the same rule of action obtain in this case and be enforced by the State in the management of the property of its citizens, as the State, so far as property relations is concerned, is but an extensive incorporation, founded for the purpose of enforcing the rights and equities of those relations.

EXPENSE OF FENCES.

The number of acres of land under fence in the State, according to Assessors' returns, is four million nine hundred and eighty-two thousand nine hundred and forty-two. This fence has not cost less than three dollars per acre for every acre inclosed, or a sum total of fourteen million nine hundred and forty-six thousand eight hundred and twenty-six dollars, a trifle less than one half the value of all the stock in the State.

The annual interest on this sum at one and one fourth per cent a month would be two million forty-two thousand and twenty-three dollars. The annual expense for repairs of fences, and the natural depreciation beyond the possibility of repair, can hardly be less in this destructive climate than twenty per cent of the original cost, a sum equal to two million nine hundred and eighty-nine thousand three hundred and sixty-five dollars, which, added to the interest account, gives us five million thirty-one thousand three hundred and eighty-eight dollars, the annual expense of keeping up the fences of the State. This is now a tax and incumbrance on our agricultural industries and energies. If levied exclusively on the stock raising interest it would amount to an annual tax of over one sixth, or nearly seventeen per cent of its present value, and would work an immediate ruin of the business itself. Deducted exclusively from the annual products of the other agricultural industries, as under the present rule it really is, it forces upon them an annual loss of about eight and one half per cent, and is truly a serious burden for them to bear.

SCARCITY OF TIMBER.

It is not improper, in this connection, to consider for a moment the scarcity of lumber in this State. Indeed, this scarcity and the cost of lumber for the building of fences may be instanced as one of the

strongest arguments in favor of a change of law and custom on this subject. It is now but about twenty-two years since the consumption of timber and lumber commenced in California, and according to a careful estimate of those best acquainted with the subject at least one third of all accessible timber of value then growing in the State is already consumed or destroyed.

We have but just commenced the great work of internal improvements, such as the building railroads, bridges, warehouses, wharves, factories, bulkheads, timbering mines, etc., and in the twenty-two years to come we shall require for such purposes ten times as much timber as we have used in that period of the past. If the scarcity and cost of fencing material is already among the greatest drawbacks or discouraging circumstances to the agricultural advancement of our State, without a change in this respect we may well feel a degree of solicitude for our agricultural interest ten years hence. To dispense with the necessity of the use of lumber is equivalent to its production. We hope, therefore, the subject of the fence laws will receive the impassionate and careful consideration at the hands of the Legislature that its importance at this time demands.

FOREST CULTURE.

No more important subject can engage the attention of a California Legislature than the encouragement of tree and artificial forest culture. The most wisely managed and most enterprising and prosperous countries of Europe long since saw the importance and necessity of planting and cultivating forests, and England and Scotland can boast of their thousands of acres of majestic pines, beeches, and oaks, at home, and their extensive forests of valuable timbers in their provinces abroad. Germany has large groves of our valuable California redwood growing in Government forests, in connection with other groves of valuable timbers collected from all portions of the world, and these forests are the pride as they are monuments of the wisdom of the nation. Germany has a special Bureau of the Government, devoted to the cultivation of the science and practice of artificial forest culture, and the preservation and protection of the natural forests. France, Austria, and Russia, even at an early day, gave to forest culture the countenance and encouragement of the Governments, and now the artificial forests of those countries are classed among the most valuable and highly prized Government property. California naturally was but a poorly timbered country, and the limited natural forests within her borders have been most recklessly and uselessly destroyed. While it is one of the first duties of the State to check this reckless destruction of the natural forests, it is a matter of no less importance to encourage and foster the growth and cultivation of artificial forests.

HARD TIMBER.

The scarcity of hard wood timber in this State, fit for the manufacture of wagons, carriages, and agricultural machinery generally, has operated to retard these particular branches of mechanical industry, and has at the same time been a serious tax on the farmers who have been under the necessity of using such machinery. From the fact that so few valuable varieties of hard timber were found growing here, naturally the impression generally prevailed that the climate of the State was not adapted to the production of such timber; that even though the most

valuable kinds should be planted and cultivated here artificially, the timber thus grown in our climate would be brash and brittle, and would be of a poor quality generally, like that of the native production. Recent experiments, brought about by the efforts of the State Agricultural Society and the offering by them of small premiums in a judicious way, have most effectually proven these impressions not well founded. It has been shown by positive experimental proof that the best Eastern varieties of hard wood timber, particularly the black and yellow locust, the black walnut, the wild black cherry, the osage orange, the rock and hickory elms, the various kinds of hard wood mulberry, the butternut, the chestnut, and the hard maple, and many other good varieties can be grown here much more rapidly than in their native forests of the Eastern and Western Atlantic States. Not only this, but the timber of many of these kinds of trees grown here has been thoroughly and practically tested by competent mechanics, and found to be equal in all the qualities of durability, elasticity, and strength to the timber of the same varieties grown East. We have also imported and grown successfully some of the most valuable varieties of hard wood trees from Australia, and the timber produced from these is also found to be equal to that grown in its native country. The facts thus obtained by a small outlay are very valuable and suggestive, and, in our opinion, warrant a special appropriation by the Legislature of a liberal sum of money, to be judiciously expended through the medium and under the direction of this society or its officers for the encouragement of artificial forest culture.

AGRICULTURAL AND MECHANIC ARTS COLLEGE.

In eighteen hundred and sixty-two Congress donated to each of the States and Territories which may provide Colleges of Agriculture and the Mechanic Arts one hundred and fifty thousand acres of land.

In eighteen hundred and sixty-eight the Legislature of California, in order to reap the benefits of such donation, created and established a State University, and provided that such University should consist of the following Colleges of Arts:

First—A State College of Agriculture, a State College of Mechanic Arts, a State College of Mines, a State College of Civil Engineering, and such other Colleges of Arts as the Board of Regents may be able and find it expedient to establish.

Second—A State College of Letters.

Third—A College of Medicine, Law, and other like professional Colleges.

In the Act creating this University the Legislature provided expressly that the College of Agriculture shall be first established, and as soon as practicable a moderate system of manual labor shall be established in connection with the Agricultural College and upon its agricultural or ornamental grounds, having for its object practical education in agriculture, etc., and to afford the students an opportunity of defraying a portion of the expenses of their education; that the College of Mechanic Arts shall next be established, and the Regents shall always bear in mind that the College of Agriculture and the College of Mechanic Arts are an especial object of their care and superintendence, and that they shall be considered and treated as entitled primarily to the use of the funds donated for their establishment and maintenance by the said Act of Congress. From the reading of the Act of Congress donating the land to the State and the Act of our own Legislature in the establish-

ment of the University, there can be but one opinion as to the intention of the National and State Legislatures. That intention is definite and unmistakable that the donation by Congress was for the sole and specific purpose of founding a college in each State for the benefit of those engaged in practical agriculture and mechanic arts. It was donated with a view of elevating the industrial classes, of creating among them a taste for scientific research and practical and technical knowledge, and thus indirectly of developing and utilizing the vast resources of the country.

In the Atlantic States this endowment has been and is being administered in a way to secure these benefits to the classes and objects intended. In Massachusetts, for instance, the Agricultural College is organized so as to secure upon its Board of Management one Trustee from each county in the State, and each county has as a Trustee of the college its best representative of its leading industries. There is three hundred and eighty-three acres of the real estate belonging to the college already divided up into farming ground, orchards, vineyards, woodland for artificial forest culture, vegetable and nursery gardens, botanical garden, ornamental grounds, and arboretum. A labor corps of students is established, and all the students are required to labor two hours on each alternate day in some department of the labor on the farm, under the direction and instruction of a skillful and intelligent Superintendent. For all extra labor the students are allowed twelve and a half cents an hour, and it is found in practice that the best students are most frequently the most industrious laborers and receive the greatest pecuniary aid therefor, as well as the formation of habits of industry and economy and good robust constitutions. The farm is well stocked with the best breeds of cattle, sheep, swine, and horses, and no department of agricultural industry is neglected.

The Cornell University of New York, also established to secure the benefits of the national donation to its citizens, is likewise a model institution, and is founded upon the same principles as that of Massachusetts—the primary benefit of the industrial classes and the higher development of the material industries. The students are also required to perform moderate labor here, and are allowed ten cents an hour for the same. The President of the institution reports here also the best laborers among the best students of the University. A large amount of labor, such as under-draining, special and experimental fertilizing, has been done on the farm of the college, and nearly all by the students, who are thus receiving practical lessons in agriculture and farming, in habits of thrift and economy.

California, above all other States, needs and could be most benefited by a practical School of Agriculture, of Mines and Mechanic Arts. Her undeveloped resources, and the new and peculiar conditions of these resources, demand practical, skillful, and intelligent management for their development. The peculiar location and climate of our country require extensive irrigation and reclamation systems, to inaugurate and accomplish which demands the highest science and engineering ability. Indeed, the field for experiment in agriculture, for genius in the direction and development of the mechanic arts and mining and civil engineering, is unlimited, and the future prosperity of the State is, to a great extent, involved in the good or bad management of these great physical questions.

How important, then, that all the means in our hands or at our command for the education of our youth in the practical arts and sciences,

in agriculture and the mechanic arts, should be rigidly and judiciously applied in that direction. How important that the expressed will and intent of the National and State Legislatures in the establishment of a college for the benefit of these industries should be faithfully and effectually executed.

Indeed, those interested in these industries and in the development of our material resources have a right to and should demand of the State such an execution of the trust donated to her for their special benefit.

But what is the real condition of our Agricultural College to-day? We have a University, and as one of the colleges composing that University there is a College of Letters, or Classical College, in all respects tolerably and in many respects admirably equipped—good enough for Yale or Harvard.

For an Agricultural College, which by law was to be first established and to receive primarily the benefit of the donation, we have a Professor of Agriculture—but transferred to and engaged in the chemical department.

For a farm we have at Oakland a highly ornamental park, which is a delightful resort for the residents of the neighborhood, and a favorite drive for the citizens of Oakland and vicinity. The ornamentation is of such a character that no use can ever be made of this ground for experiments in agriculture or horticulture, and indeed it is not designed that there ever shall be.

At Berkeley we have a most excellent piece of land, upon which has been expended this year in laying it out and in general ornamentation the sum of nearly nine thousand dollars; but not one dollar to prepare it for agricultural or horticultural purposes, and if it is ever to be used for these purposes most of the work that has been done will have to be undone. It is understood that the Regents put the time of occupation of the lands at Berkeley for agricultural purposes to a period of eight or ten years hence. The agricultural Professor has not yet been permitted to plant a tree or make one single experiment on the grounds of the University, either in agriculture or horticulture.

For an Agricultural College building we have the basement story of a building called the Agricultural College, but really designed in the far future for a chemical and metallurgical department. Thus it will be seen that while we have accepted the grant of Congress and nominally established an Agricultural and Mechanic Arts College, we have really nothing to show for them in a practical way. All that we have to show for the congressional donation and the large appropriations from the State School Fund, the Seminary Fund, and the Public Building Fund, is a Classical College where students designed for the learned professions are educated free, or rather at the expense of the donation and funds intended to be devoted exclusively for the benefit of the farmers and mechanics, and indirectly for the development of the material resources of the State. A classical education will never make a farmer or a mechanic; and we think the industrial classes have just cause for complaint at the manner in which the trust designed for their especial benefit is being administered. In looking over the list of twenty-two Regents who have had the management of the affairs of the University since its organization, or for the past four years, we find that twelve are residents of San Francisco, and eight of Oakland or its immediate vicinity, and that but one of the whole number is a practical agriculturist, and one a practical mechanic.

Having called attention to some of the facts and features connected with the Agricultural College about which we think the agriculturists and mechanics have a right to complain, we commend the whole subject to the good judgment of the Legislature.

IRRIGATION AND RECLAMATION.

The season of eighteen hundred and seventy-one was a season well calculated to call general attention to the benefits and prove the necessity of the adoption of some general plan of irrigation throughout each of the large open valleys of the State. The year eighteen hundred and seventy-two is ushered in under circumstances equally as well calculated to call general attention to the benefi s and prove the necessities of some general plan of reclamation from ruinous overflow of a very large portion of these same valleys.

An experience of twenty years, during which time the State and individuals have squandered beyond redemption in efforts at special reclamation millions of money, and the floods have swept away millions of property and caused an incalculable amount of suffering and the loss of many lives, has pretty effectually proved the utter uselessness of any effort to reclaim any considerable portion of the swamp and overflowed lands of the interior of the State on any plan or system that shall not embrace within its scope all of this class of lands bordering on the Sacramento and San Joaquin Rivers and their tributaries, including the islands about their confluence.

The same experience has proved the utter impracticability of any plan or system for such reclamation that shall not contemplate additional channels to conduct the water through the great valleys which are by nature necessarily the receptacles of the vast quantities of water that fall on the great extent of rapidly sloping watersheds that so closely surround them, as well as additional outlets into the bays or tide water at points some distance from the one at which all these waters are now by the natural channels concentrated and, as it were, heaped up together. These propositions suggest the propriety and importance of considering a joint plan of reclamation and irrigation that shall embrace in mutual interests and mutual benefit, and consequently mutual duties and joint expense, the entire portion of the State lying between the Coast Range and Sierra Nevada Mountains, and north and east of the Bay of San Francisco. This district of country embraces an area of not less than five million acres of land—the largest portion of which, owing to the droughts and floods to which it is so frequently subject, is not sufficiently reliable as an agricultural country to support above the contingencies of occasional loss and suffering any very large amount of population, but which, securely reclaimed from destructive overflows, and supplied with the facilities of necessary irrigation, can be made to support more easily and in a condition of greater permanent prosperity than the present inhabitants enjoy, one person to every acre of land within its limits, or five million of people.

The longer the adoption of some plan for general irrigation and general reclamation is delayed, the greater the difficulties in which the subject will be involved. Local plans and special systems will engage the attention and enlist the energies and means of the people, conflicting rights and vexatious questions of water privileges will grow up to

involve them in unfriendly contention and fruitless litigation, and the whole country will suffer for the want of a system of general wholesome laws that shall secure equal privileges and equal rights to all. The Legislature cannot too soon address itself to the earnest consideration of this subject.

REAL ESTATE AND PERMANENT IMPROVEMENTS.

Since the last Report the Board have, in pursuance of the authority vested in them by the original charter of the society, purchased a very valuable piece of real estate. Five blocks of the northern half of the inclosed grounds occupied by the society as stock grounds and race course, have heretofore belonged to an association known as Union Park Association. The property was purchased by the association for the sum of seven thousand two hundred dollars, and the society was allowed to use it free of charge during its annual Fairs; but the rent of the ground and all its benefits, except during the Fairs, belonged to the association. The Board has purchased sixty-six of the seventy-two shares of this property, together with all its improvements, at its original cost, and intend as soon as practicable to purchase the six remaining shares, which it is understood can be had at the same rate.

The south half of the Union Park ground, now all in possession of the society, is owned by an association known as Agricultural Park Association, but the society hold a perpetual lease of this half, the only condition being that the society shall hold an Agricultural and Stock Fair annually on the same, and in default of such Fair the lease is abrogated and the land reverts to the original owners. So that it will be seen that the society is owner in fee of the north half of the grounds, and so long as it keeps up the annual Fairs is virtually so of the south half. The value of this property, with improvements, is, at a low estimate, from thirty-five thousand dollars to forty thousand dollars. Within the last two years the Board has expended some twelve thousand dollars in permanent improvements upon these grounds, and within the next two years it will become necessary to make still greater and more costly improvements. The main stand for the accommodation of the people at the trials of speed, the examination and grand parades of stock, requires to be taken down and replaced with one of at least double the present capacity. The necessary expense of such improvement is estimated at not less than fifteen thousand dollars.

Improvements have also been made at the Pavilion. The County of Sacramento, with her accustomed liberality toward the society, has borne a share of these improvements. The capacity of the halls for exhibition purposes have within the last two years, by such improvements, been doubled, and yet at the last Fair it became necessary to obtain the use of additional ground, and still all the lumber wagons and heavy agricultural machinery had to be exhibited in the open air.

It will thus be seen that with the increased usefulness of the society heavy additional outlays are becoming necessary. As these outlays are for the direct benefit of the material industries of the State and for the accommodation of that class of citizens who contribute most to the improvement of these industries, we feel warranted in asking of the Legislature a liberal appropriation to aid the society in meeting them.

LIBRARY.

One of the great necessities of the agricultural interests of the State is a general diffusion of agricultural knowledge among our farming communities. It is to be regretted that we have not on this coast a public agricultural library, embracing to any extent the many valuable agricultural works now extant and to be found in the libraries of the best managed and most useful eastern Agricultural Societies. The State at great expense has purchased, and by large annual outlays maintains a library at the State Capitol, mainly devoted to the subjects of legal jurisprudence and general legal literature, especially for the benefit of the non-producing classes; but this library is of no practical benefit to the industrial classes, nor is it designed or intended to benefit them or to aid in the development of the agricultural or other material industries of the State.

To secure the general welfare and increase the skill, effectiveness, and practical intelligence of the producing classes, should be among the first objects of an enlightened, popular Government; and in no other way can these objects be so economically and surely secured as by placing within the reach of these classes public libraries well filled with works treating in a practical manner of the several industries in which they are engaged. The State Agricultural Society is the proper custodian of such library, and but for the want of means the Board would long since have provided it. The great need of such library is the daily experience of the officers of the society, as a convenience for reference in answering inquiries constantly coming from the industrial classes. The State should no longer neglect to supply this want, and thus in this respect place the producing classes upon an equal footing with its professional and non-producing citizens. We commend this subject to the attention of the Legislature, hoping it will be pressed more particularly by the representatives of the rural districts, feeling confident that its justice will secure it against any opposition from any quarter.

FINANCES OF THE SOCIETY.

Unexpended appropriations in 1869	$2,883 00	
Balance brought from account 1869	61 84	
Receipts for 1870	33,932 30	
Receipts for 1871	44,797 77	
Cash assets for two years		$81,674 91
Contra.		
Incidental expenses and Premiums for 1870	$28,428 68	
Permanent improvements	6,000 00	
Paid for real estate	5,600 00	
Incidental expenses and Premiums for 1871	33,541 83	
Permanent improvements	6,500 00	
Paid for real estate	1,000 00	
Total expenses for two years		81,070 51
Balance in treasury January 1st, 1872		$604 40

CHAS. F. REED,
President.

I. N. HOAG,
Corresponding Secretary.

COMPILATION OF LAWS

RELATING TO THE

STATE AGRICULTURAL SOCIETY.

A COMPILATION

OF ALL THE LAWS NOW IN FORCE RELATING TO OR AFFECTING THE STATE AGRICULTURAL SOCIETY.

AN ACT

TO INCORPORATE A STATE AGRICULTURAL SOCIETY AND APPROPRIATE MONEY FOR ITS SUPPORT.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. There is hereby established and incorporated a society to be known and designated by the name and style of the "CALIFORNIA STATE AGRICULTURAL SOCIETY," and by that name and style shall have perpetual succession, and shall have power to contract and be contracted with, to sue and be sued, and shall have authority to have and use a common seal, to make, ordain and establish, and put in execution such by-laws, ordinances, rules, and regulations as shall be necessary for the good government of said society, and the prudent and efficient management of its affairs; *provided*, that said laws, ordinances, rules, and regulations shall not be contrary to any provision of this charter, nor the laws and Constitution of this State or of the United States.

SEC. 2. In addition to the powers above enumerated, the society shall, by its name aforesaid, have power to purchase and hold any quantity of land not exceeding four sections, and may sell and dispose of the same at pleasure. The said real estate shall be held by said society for the sole purpose of establishing a model experimental farm or farms, erecting inclosures, buildings, and other improvements calculated and designed for the meeting of the society, and for an exhibition of the various breeds of horses, cattle, mules, and other stock, and of agricultural, mechanical and domestic manufactures and productions, and for no other purposes.

And be it further enacted, That if, from any cause, said society shall ever be dissolved, or fail to meet within the period of two consecutive years, then the real estate held by it, together with all the buildings and appur-

tenances belonging to said estate, shall be sold as lands are now sold by execution, and the proceeds deposited in the State Treasury, subject to the control of the Legislature.

AN ACT

SUPPLEMENTAL TO AN ACT TO INCORPORATE A STATE AGRICULTURAL SOCIETY, APPROVED MAY THIRTEENTH, EIGHTEEN HUNDRED AND FIFTY-FOUR, AND AMENDED MARCH TWENTIETH, EIGHTEEN HUNDRED AND FIFTY-EIGHT.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The general prudential and financial affairs of the society shall be intrusted to a Board of Agriculture, to consist of a President and nine directors, five of whom shall constitute a quorum.

[Amended section.]

SEC. 2. Said Board of Agriculture shall be elected at a general State Agricultural Convention, to be held at the Capital of the State, in the year one thousand eight hundred and sixty-three, in the month of March, and in the month of January every year thereafter, to consist of the life members and annual members of the State Agricultural Society and four delegates from each County Agricultural Society within this State incorporated under the general laws of this State for such corporations, and an equal number from each District Agricultural Society also incorporated under the general laws of this State for such purposes; said delegates to be chosen at the annual Fair or annual meeting of each such society next preceding the State Agricultural Convention; *provided*, said Convention to be held in March, in the year one thousand eight hundred and sixty-three, may admit any person or persons representing any of said County or District Agricultural Societies, as the Convention may determine by a majority vote, whether such persons shall have been elected by their respective County or District Societies, as provided in this Act, or not.

SEC. 3. The Board of Agriculture shall, at its first meeting after its election, be divided by lot into three equal portions (omitting the President), one portion to continue in office one year, one portion two years, and one portion three years; one third of the number, together with the President, to be elected at the State Agricultural Convention annually thereafter; the Directors to hold office three years.

SEC. 4. The Board of Agriculture may, in the absence of the President, choose one of its other members temporary Chairman. They shall elect a Treasurer and Secretary, not members of the Board, prescribe their duties, fix their pay; and the said Treasurer and Secretary shall be subject to removal at any time by a majority of said Board.

SEC. 5. The Board of Agriculture shall use all suitable means to collect and diffuse all classes of information calculated to aid in the development of the agricultural, stock raising, mineral, mechanical, and manufacturing resources of the State; shall hold an annual exhibition of the

industry and products of the State; and, on or before the first day of January of each year in which the Legislature shall be in regular session, they shall furnish to the Governor a full and detailed account of all its transactions, including all the facts elicited, statistics collected, and information gained on the subject for which it exists; and also a distinct financial account of all funds received, from whatever source, and of every expenditure, for whatever purpose, together with such suggestions as experience and good policy shall dictate for the advancement of the best interests of the State; the said reports to be treated as other State documents are.

Sec. 6. The Board of Agriculture shall have power to appoint a suitable number of persons to act as Marshals, who shall be from twelve o'clock, noon, of the day previous to the opening of the exhibition until noon of the day after the close of the same, vested with all the powers and prerogatives with which Constables are invested, so far as acts or offenses committed within or with reference to or in connection with the exhibition are concerned.

Sec. 7. The Board of Agriculture may, in its discretion, award premiums for the best cultivated farms, orchards, vineyards, gardens, etc.; *provided*, that said Board shall not audit, allow, or pay an amount exceeding one thousand dollars in any one year for traveling expenses of Visiting Committees in examining said farms, et cetera; *provided* further, that no person except practical agriculturists shall be appointed on said committees.

Sec. 8. It shall be optional with any to whom a premium is awarded to receive the article named or its equivalent (as affixed) in coin.

Sec. 9. The State Agricultural Society shall have power at its first annual meeting after the passage of this Act to make such alterations in its constitution as shall make it conform to the provisions of this Act.

Sec. 10. All Acts or provisions in conflict with the provisions of this Act are hereby repealed.

Sec. 11. This Act shall take effect from and after its passage.

CONSTITUTION

OF THE

STATE AGRICULTURAL SOCIETY.

CONSTITUTION

OF THE

CALIFORNIA STATE AGRICULTURAL SOCIETY.

ARTICLE I.—NAME.

SECTION 1. This society shall be called "The California State Agricultural Society."

ARTICLE II.—OBJECT.

SECTION 1. It shall be the object of this society to encourage the cultivation of the soil and the general development of all the agricultural resources of this State.

SEC. 2. To foster every branch of mechanical and household arts calculated to increase the happiness of home life.

SEC. 3. To extend and facilitate the various branches of mining and mining interest.

ARTICLE III.—MEMBERSHIP.

SECTION 1. *Annual Members.*—Any person who has during the year eighteen hundred and sixty-five, or who shall during this year or any subsequent one, pay into the funds of this society the sum of five dollars, may become a member of the same; such membership to expire on the thirty-first day of the following December.

SEC. 2. *Life Members.*—Any person may become a member for life by the payment of fifty dollars; or, if already a member, by the payment of forty dollars, and shall thereafter be exempt from all dues and assessments.

SEC. 3. *Honorary and Corresponding Members.*—Any person whom the Board shall propose may be elected an honorary or a corresponding member, and shall enjoy, free of charge, all the privileges of the society, except voting and holding office.

SEC. 4. *Privileges of Members.*—Any citizen of this State, being a member of this society, shall be eligible to office, entitled to vote, and

enjoy the free use of the library, under the rules of the same, and have free admission, accompanied by his wife and minor children, to all the exhibitions of the society, and shall be permitted to compete for premiums in any or all departments.

SEC. 5. *Expulsion of Members.*—Any member who shall present for exhibition any article or animal which he is not entitled by the rules of the society to exhibit, or who shall attempt to deceive, or be guilty of a breach of good faith toward the society, may be expelled by a vote of two thirds of the members present at any meeting of the society; *provided*, always, that no member shall be expelled unless written notice of the alleged offense shall have been served on him, or left at his usual place of residence at least twenty days previous to the action.

ARTICLE IV.—OFFICERS.

SECTION 1. The officers of this society shall consist of a President and nine Directors, who shall constitute a State Board of Agriculture, five of whom shall constitute a quorum. They shall elect a Treasurer and Secretary, not members of the Board. They may also appoint annually, as officers of the Board, a chemist, a botanist, a meteorologist, a geologist, a metallurgist, an ornithologist, and an entomologist, and define the duties of each. They may appoint such committees on the various departments of agriculture, mining, and manufactures, either generally or for specific purposes, as they may deem important for the best interests of the State, and require such committees to report the results of their investigations to the Board at such times as may be named by them.

SEC. 2. *Duties of President.*—The President shall preside at all meetings of the Board, and of the society; shall have power to call special meetings of the Board when necessary, and at the written request of ten members may call extra meetings of the society; shall appoint all meetings not otherwise provided for; shall vote only at the election of officers, and in case of a tie; and shall sign all financial and official documents emanating from the society not otherwise provided for. In the absence of the President from any meeting of the Board or society, any Director may be called to the chair, and during such meeting, and for the completion of any business transacted or ordered at the same, shall have the same powers as the President.

SEC. 3. *Duties of Secretary.*—The Secretary shall conduct the correspondence of the society, keeping in a separate book copies of all letters written in the name or on behalf of the society, holding the same free to the inspection of any member of the society, at any regular meeting of the same. He shall also receive and file all letters addressed to the society, holding the same subject to the Board of Directors. He shall attend all meetings of the society and the Board, keeping a full record of the doings of each in a separate book, and shall furnish a copy of the proceedings of each meeting to the Committee on Publication within five days after the close of such meeting. He shall prepare and publish all notices of meetings, shall keep a roll of all Standing Committees, and call the same (noticing absences) whenever desired to do so by the Chair; shall sign all certificates of honorary and corresponding memberships, and forward the same to those entitled to receive them. He shall keep, in a book prepared for that especial purpose, the name and address of every member; shall prepare and sign all gratuitous or complimentary cards or tickets of admission; shall countersign all diplomas, certificates of merit,

etc., awarded by the society, and forward the same to their respective claimants. He shall be ex officio Librarian; shall keep the seal, and all the plates, dies, engravings, etc., belonging to the society, and shall cause to be struck therefrom such medals and impressions as may from time to time be required. He shall have charge of all specimens, models, plants, seeds, books, etc., and arrange, prepare, or distribute the same under the direction of the Board. He shall prepare all reports to be made by the Board to the Society, and all reports to be made by the Society to the State. He shall receive all moneys due or payable to the Society, and pay the same to the Treasurer, taking his receipt therefor; shall hold all bonds filed by officers of the Society for the faithful performance of their duty, and all vouchers for every class of expenditure. He shall countersign all drafts ordered by the Board, and all certificates of annual and life membership, and keep an account of the same, in a separate book, as they are issued, and shall, in December of each year, prepare a tabular statement of the receipts and expenditures of the Society, according to the law incorporating the same. For which services he shall receive such compensation as the Board shall decide to pay.

SEC. 4. *Duties of the Treasurer.*—The Treasurer shall receipt for all funds at the hands of the Secretary, and shall disburse the same only on the order of the Board, attested by the President and the Secretary. He shall also hold in trust all certificates of stock, bonds, notes, deeds, or other evidences of debt or possession belonging to the Society, and shall transfer, invest, or dispose of the same only by direction of the Society, or by a written order of the Board. He shall, within ten days after his election, file with the Secretary a bond for the faithful performance of his duties; said bond to be approved by the Board and to be in a sum equal to twice the combined amounts of the funds on hand and the estimated revenue for the year; and shall, at the annual meeting, make to the Society a detailed report of all his doings; for which services he shall receive such compensation as the Board shall from time to time decide to pay.

SEC. 5. *Duties of the Board.*—The Board of Managers shall have the general and financial management of all the affairs of the society in the interim of annual meetings. It shall fill all vacancies occurring between elections, and shall make the necessary preparations and arrangements for all meetings, fairs, exhibitions, etc. The Board shall also have power to make its own by-laws (not inconsistent with this Constitution) and arrange the time and place of its own meeting.

ARTICLE V.—STANDING COMMITTEES.

SECTION 1. *Committee of Finance.*—The Committee of Finance shall consist of three (the President and Secretary being two), whose duty it shall be to audit the Treasurer's account, to examine and approve all bills before they are paid, to have a general supervision of the finances of the society, and to report their doings in full to the Board whenever called on so to do.

SEC. 2. *Library Committee.*—The Library Committee shall consist of three (the Secretary being one), whose duty it shall be to have the general supervision of the library and cabinet, to make all necessary rules and regulations for the government of the same (said rules and regulations being subject to the approval of the Board), to suggest such means for the safe keeping and enlargement of both the library and cabinet as they may deem expedient, and to make a full report of their doings,

together with the state of the department under their charge, at each annual meeting.

SEC. 3. *Visiting Committee.*—The Visiting Committee shall consist of three, whose duty it shall be to visit and examine all farms, orchards, vineyards, nurseries, field crops, mining claims, ditches, mills, etc., which may be entered for competition, and which shall require examination at other times and places than the annual Fair; to award premiums for the same, according to the schedule, and recommend such gratuities as they may deem proper, and make a full report to the Board at least one day previous to the annual meeting.

SEC. 4. *Committee of Publication.*—The Committee of Publication shall consist of three (the President and Secretary being two), whose duty it shall be to contract for and superintend, under the direction of the Board, all printing and publishing necessary for the prosperity of the society.

ARTICLE VI.—DONATIONS AND BEQUESTS.

SECTION 1. All donations, bequests, and legacies to this society, designated by the donors for any particular purpose embraced within the objects of the society, shall be with strict fidelity so applied; and the name of each donor, together with the amount and description of such donation, and the object for which it was designated, shall be registered in a book kept expressly for that purpose.

ARTICLE VII.—MEETINGS AND EXHIBITIONS.

SECTION 1. *Exhibitions.*—The society shall hold an annual Fair and Cattle Show in the City of Sacramento, and may at its discretion hold such other exhibitions as it may deem conducive to the interests of agriculture.

SEC. 2. *Annual Meeting.*—The annual meeting shall be held at the Capital of the State at such time during the month of January in each year as the Board may designate, at which time all the officers from whom reports of the preceding year's service are required shall present the same, and all officers for the ensuing year shall be elected by ballot; and all officers shall continue in office until their successors are duly qualified.

SEC. 3. *Special Meetings, how called.*—No special meeting of the society shall be called but upon thirty days notice in the columns of a newspaper published in each of the Cities of San Francisco, Sacramento, Marysville, and Stockton; nor without a request signed by at least ten members.

SEC. 4. *Proxy Voting.*—It shall not be admissible for any member to vote by proxy in any meeting of this society, or its Board of Managers.

SEC. 5. *Quorum of the Society.*—At any meeting of this society fifteen members (a majority of whom shall represent counties other than the one where the meeting shall be held) shall constitute a quorum.

ARTICLE IX.—OFFICE AND ROOMS.

SECTION 1. The office, rooms, library, and cabinet of the society shall be permanently located at the Capital of the State.

ARTICLE X.—AMENDMENTS.

Section 1. Amendments to this Constitution must be presented in writing at an annual meeting, when, if unanimously agreed to, they shall be adopted; but if there be objection, and a majority consent thereto, they shall be spread upon the minutes and lie over until the next annual meeting, when they shall be read, and if after due discussion two thirds of all the members present vote for the amendments, they shall be adopted and become a part and parcel of this Constitution.

ARTICLE XI.—EFFECT.

Section 1. This Constitution shall take effect from and after its passage.

I certify the foregoing to be a true copy of the Constitution of the California State Agricultural Society, as amended by unanimous consent at the annual meeting of the society, held on the twenty-eighth day of January, A. D. eighteen hundred and sixty-nine.

I. N. HOAG, Corresponding Secretary.

TRANSACTIONS

OF THE

STATE AGRICULTURAL SOCIETY

FOR

THE YEAR 1870.

STATE BOARD OF AGRICULTURE FOR 1870.

PRESIDENT.

CHARLES F. REED.....Grafton, Yolo County.

DIRECTORS.

H. M. LARUE.....Sacramento.
H. R. COVEY.....San Francisco.
R. S. CAREY.....Yolo.
C. T. WHEELER.....Sacramento.
EDGAR MILLS.....Sacramento.
ROBERT HAMILTON.....Sacramento.
WILLIAM BLANDING.....San Francisco.
E. J. LEWIS.....Tehama.
WILLIAM P. COLEMAN.....Sacramento.

OFFICERS OF THE BOARD.

Secretary.....ROBERT BECK, Sacramento.
Treasurer.....R. T. BROWN, Sacramento.

REPORT

OF THE

STATE BOARD OF AGRICULTURE FOR 1870.

To the Members of the State Agricultural Society:

Gentlemen: In presenting to you our annual report at this time we feel no little pride and satisfaction in being able to say that the State Agricultural Society, the management of which has been entrusted to our care, was never in a more prosperous condition, financially and otherwise, than at present.

A comprehensive statement of the transactions of the Board for the past year, the present position and wants of the society, together with some recommendations for changes, with a view to rendering the society more efficient in assisting in the development of the State's numerous agricultural and other resources will be found at the close of this report.

In reviewing the progress and results of the industries of the State for the past year the Board find abundant reason for indulging in most sincere thankfulness to Providence for the general prosperity that has been vouchsafed to our entire people. In looking over the industrial prospects of the future we also find abundant reason for entertaining most sanguine hopes for an uninterrupted continuance of a healthy and substantial progress in all the arts, sciences; and industries that contribute to the general prosperity and happiness of a people.

The long continued dry weather during the past few months was beginning to cause serious apprehensions among all classes of the community that we were about to experience a repetition of the disastrous consequences of a dry season like that of eighteen hundred and sixty-three and eighteen hundred and sixty-four. The late rains, however, and the general change of the weather gives promise that the ensuing year will be one of the most prosperous that the State has ever experienced.

In pursuance of a better and more rational system of agriculture which our grain farmers have been adopting for the last few years, an

unusually large breadth of land was Summer fallowed during the last Spring. The weather for farm labor the fore part of the present sowing season being so favorable, all the land thus prepared has been put in early and in a most excellent condition. There has been sufficient rain to keep the work of planting going on continuously in most portions of the State, and it is believed that as a general thing land has been in a better condition for working and planting than in seasons when we have experienced a greater abundance of wet during the planting time. If we have the amount of rain fall between this and Spring which we may now reasonably expect, we may look forward for one of the most abundant grain harvests we have ever experienced in the State. The prospects of an unusually large foreign demand for our surplus grain were never better than at present. The supply of wheat on hand at the present time at Liverpool, New York, Chicago, and Milwaukee, the great centers of concentration of the breadstuffs of the world, is reported to be four million seven hundred and seventy-eight thousand bushels less than it was one year ago. The war in France and Germany, if continued until after the time for planting in those countries is past, must cause a very great falling off in the production of breadstuffs there the coming season, while the excess of consumption and destruction by the armies over the ordinary consumption of those countries in time of peace must necessarily be very great. The present indications are that Germany and France will not only fail to produce a surplus the coming season, but that they will themselves be heavy buyers for their own consumption.

SILK CULTURE.

As a consequence of the war between France and Germany, this promising industry just in its infancy in our State, has met with a very unexpected and much to be regretted loss. Our silk culturists, encouraged by previous large and apparently constant demand for California silk eggs for European countries, turned their product for the past season mostly into that article. Orders were received from Paris last Spring for large quantities of eggs, and the prospect for good profits to producers looked very flattering. When the war commenced, however, the orders that had been received were countermanded and no others sent out. Great injury to all the industries of France, and especially to those connected with silk culture and manufacture, is the necessary result of the war, carried on as it has been entirely within the borders of that country. The sale of the California eggs has thus unexpectedly been cut off and the product of the past season rendered almost an entire loss. As the eggs will necessarily hatch in the hands of the producers, no consideration can be realized from them except for those necessary for home consumption. Through an anomalous combination of circumstances the immediate demand for cocoons has also been injured by the war. The silk manufacturing machinery of France, being nearly half that of the world, has heretofore been able to consume nearly all the silk produced in Europe, and has also required large importations from the silk districts of Asia. This machinery is in effect now most entirely idle. As a consequence the cocoons and raw silk produced the last season in many portions of France, in Italy, Spain, and other parts of Europe, and in China and Japan, are seeking a market elsewhere. The capital and machinery employed in silk manufacturing, outside of France, are insufficient to handle and consume the large amount of extra material thus offered. Thus, for the present, the market is overstocked with

cocoons and raw silk—a thing unknown in the history of this industry in the past, and not probable to occur again. All such anomalous conditions of commerce and trade, in articles of such universal consumption, are followed by changes which prevent a repetition of themselves in the future. Such changes are already taking place in reference to these industries.

Manufactured silk goods are rapidly increasing in value, and are likely to go very high. Capitalists in our own country are seeing the promise of certain and large profits, are seeking investment in silk factories. Heavy manufacturing houses in Lyons and other portions of France that have heretofore had only agencies in the United States for the sale of their goods, are preparing to transfer their entire establishments to this country. Thus the war in France has set the eyes of silk manufacturers towards the United States. The fifty per cent ad valorem duties which all manufactured silk goods imported to this country have to pay gives them a strong invitation and inducement to take advantage of it. The fact that raw silk and cocoons may be imported free of duty opens the door for the immediate supply of the raw materials, while the favorableness of the climate in many portions of our country—and especially in California—for the production of silk guaranties a plenty of that raw material close at hand for all future time.

If peace was to be concluded between Germany and France immediately, the silk crop of France for the next year would necessarily be very light if not a total failure. It will require years to repair the injuries already done to this industry, and in the presence of the disease of the worms which has prevailed there in the past, and most likely will in the future, it is not probable that the production will ever reach the maximum raised before the war. Thus the temporary loss to our silk culturists is accompanied with a promise of almost certain compensation in the immediate future of an hundred fold, and the industry in which they are engaged has received an impulse as unexpected as it is encouraging. By careful inquiry among our silk growers we learn that the disease among the worms in some localities, the past season, was entirely confined to those of French or European origin. The Japanese worms proved hardy and healthy in all cases, even when fed in the same buildings and close by the side of the French which were badly diseased. Though the first importations of Japanese eggs were of an inferior kind, making small cocoons, of late varieties have been obtained from the extreme north of Japan which are in no way inferior to the best French annuals in the quality or quantity of the silk produced, and are at the same time perfectly healthy and reliable.

There are more mulberry plantations being set out this season than at any planting season heretofore, and on the whole the industry is in a most promising condition. If our farmers generally would plant a few mulberry trees about their buildings and on the line of the highways and division fences they would answer the double purpose of ornamenting and beautifying their places and laying the foundation for the general introduction of a pleasant and valuable industry. Thus also an important step would be taken towards a more diversified and hence more agreeable and profitable agriculture.

BEET SUGAR.

In the report of the Board for the year eighteen hundred and sixty-four, and in every annual report since that time, the attention of our

people has been most earnestly called to the feasibility and importance of the production of the sugar beet in our State and the manufacture of sugar therefrom. So important have we deemed this subject that we have returned to and repeated our recommendations year after year, and have from time to time shown by carefully compiled statistics the amount of gold California was annually exporting in return for sugar imported.

Within the last seven years—and since we first called attention to this industry and demonstrated its practicability in California—we have paid for imported sugars and molasses over thirty-four millions of dollars. In the light of this fact we are able to place some estimate upon the importance of the successful initiation of this industry in our State during the past year upon a scale that leaves no doubt as to its entire success in every particular. We may now look forward with certainty to the time, and that not far distant, when we shall be able to produce all the sugar and molasses we shall need for home consumption, and we see no reason why we may not become exporters. Thus, by the addition of a single new industry we shall save for distribution among our own people, and mostly among the laboring class, five millions of dollars a year.

Other and still greater advantages may be looked for as a consequence of this new industry. It has been demonstrated that the manufacture of sugar from the beet contributes greatly to increase the other products of the soil. The extraction of the saccharine matter deprives the root of only a part of its elements. The pulp and foliage of the beet supplies for animals an abundance of food, and the returns of the sugar works will enable them to produce manures which will indefinitely increase the fertility of the soil. In a single province of France, where the product of wheat before the introduction of this industry was but nine hundred and sixty-one thousand one hundred and seventy-three bushels, and the number of cattle seven hundred, a few years after its introduction the wheat product had increased to one million one hundred and fifty-eight thousand two hundred and fifty-six bushels, and the number of cattle to one hundred and ten thousand five hundred.

In this connection we would suggest that experience in France, Germany, and other beet sugar countries, has proven that the best land for this purpose is that which will produce the best wheat or secretes the greatest amount of saccharine matter in the grape. Many sections of this State, where the land has been for many years subjected to an annual cropping of grain, and is for this crop nearly exhausted, are as well adapted to the production of the sugar beet as the richest alluvial bottoms. The beets on such lands will not grow so large, and the product of the root per acre will be less in tons; but the beets will be sweeter, and the number of pounds of sugar per acre will be greater.

We would also suggest the practicability and propriety of the organization of sugar companies among our farmers, and the manufacture of sugar on a scale suited to the means and facilities of the company. One hundred thousand, or fifty thousand, or twenty-five thousand dollars are not necessary to a successful beginning. On the contrary, small factories conducted on the coöperative plan and located in the immediate vicinity of those interested in them, are generally more economically managed and pay greater dividends on the capital invested. Farmers should not wait for capitalists to monopolize the profits of this industry. Good lands, the coöperation and intelligent direction of labor, with a small amount of ready money with which to put up buildings and purchase machinery are all the elements that are necessary for the successful and

profitable manufacture of sugar. The process of making sugar from beets is as easily learned by any farmer and may be as successfully practiced by him as the process of making cheese from milk.

DAIRY FARMING.

Dairy farming, carefully and properly conducted, has always been one of the most profitable of the agricultural industries of the United States, and in no State has it paid better than in California. Among our most prosperous and wealthy farmers are those who, in one way or another, have made a specialty of dairy farming. The people of no other State have paid so dearly for their milk, butter, and cheese as those of California. As prices have rated heretofore, it costs an ordinary family more to pay their milk, butter, and cheese bills than to pay for all the flour, potatoes, beans, onions, and other strictly home produced agricultural necessaries they consume; and yet we are safe in the assertion that there is not over one farmer in the State that makes a practice of producing butter or cheese for sale to one hundred almost exclusively engaged in raising wheat and barley for the markets. While we are large exporters of wheat and barley, we still import annually over one million dollars worth of butter and cheese. Such are the inconsistencies of the California system of agriculture. We would most earnestly recommend our farmers to keep more cows, hogs, and sheep on their farms and cultivate less acres to grain. We are satisfied that such a change in the practices of the agriculturists generally would result in greater pecuniary gains, and at the same time increase, rather than decrease, the fertility and productiveness of the soil.

A few acres well seeded to alfalfa or Chile clover will, in this country, afford a good living to almost an incredible number of stock. We have noticed almost universally increased evidences of thrift and prosperity surrounding those farmers who have already adopted this system over those who still adhere to the old plan of producing exclusively wheat and barley and buying everything else consumed on their place or in their families.

CALIFORNIA WINES AND GRAPES.

There has for a number of years past been a sensible change for the better in our native wines. This has been evident in the improvement from year to year of the samples exhibited at our County, District, and State Fairs. Another evidence of such improvement is found in the increased demand for our wines for general consumption and a corresponding decrease in the demand for those of foreign brands. This improved quality of our wines is the result not so much from any great improvement in the kind or quality of our grapes as in the system of making and handling the wines themselves. Our grape growers have learned by experience that some skill is required to make a good and uniform quality of wine, and that in the absence of this skill and the necessary means and facilities for keeping and handling the juice of the grape until such quality of wine is secured, it is less trouble and more profitable for them to sell their grapes to those who possess that skill and the required means and facilities. Wine making companies have been formed in many localities, and wine factories and cellars established, at which the grapes of the surrounding country are purchased, carefully assorted and classed,

and each class made into such wine as in the judgment of the operators they are best adapted. This system of wine making is one that we have been recommending in our reports and otherwise for years past, and we rejoice that it is being so generally adopted. It is the only system that can secure good and uniform brands of wine, and give them character and command for them a market at home or abroad. The evidences of prosperity manifested by such wine making companies are conclusive as to the satisfactory profits made on the capital invested in this manner. The prices paid for grapes—from twenty dollars to twenty-five dollars per ton—are very satisfactory to the growers. Well cultivated vineyards of the California grape are made to yield in this way a net annual income of from fifty dollars to one hundred dollars per acre. Good vineyards of choice table grapes yield much larger incomes. The Muscat of Alexandria have averaged for years as high as two hundred and seventy dollars net per acre; while the Black Hamburg, Black Malvoile, and Golden Chasselas have netted four hundred and fifty dollars, and the Alexandria Muscat has paid a profit of seven hundred and seventy-five dollars per acre.

We present these figures to our grain farmers, and ask them if it will not be better to plant vineyards on some portions of their lands that have been cropped with grain until the annual product scarcely pays the expense necessary to secure it. Such lands are still good for the vine, and in this way may be made in a few years to yield a handsome income to their owners.

While annual crops of grain exhaust and impoverish the soil, the vine recuperates and improves it. While grain requires planting yearly, grape vines once planted and in bearing will yield annual crops for a lifetime. There has never yet been in the State a failure of the grape crop from drought or any other cause. While we would encourage the grain farmers on the plains to plant vines, and thus diversify their crops, we do not forget that we have thousands of acres of most excellent vine land bordering the foothills, generally known as "red land," and a vast area in the foothills themselves, that for wine making and raisin culture cannot be excelled in the world. France and Germany have heretofore been our strongest opponents in the introduction of our wines into the markets of the world. While we regret the present devastating war between them as a great calamity, not only to themselves, but to mankind generally, we are not insensible of the advantages accruing to many of our industries as a result of that war. Among those industries already most favorably affected thereby are grape growing and wine making, and we hope our people will not be slow to make the most of the advantages thus accruing, nor in taking the necessary steps to render those advantages permanent and profitable. A late ruling of the Commissioner of Internal Revenue, to the effect that sparkling wines made from the native grapes, or from wines produced from such, are not subject to taxation, while all such wines made from foreign grown grapes or foreign wines is subject to taxation under the Internal Revenue laws, is most favorable to the wine interests of our State.

FRUIT CULTURE.

Fruit culture in California is becoming one of our most promising industries. For some years before the completion of the overland railroad and the consequent opening of the Eastern markets for our surplus fruits, those engaged extensively in raising fruit for sale found it difficult

to make the business satisfactorily remunerative. The fact that fruits in many portions of our State mature from three to four weeks earlier than the same kinds do in the Atlantic States, the acknowledged superiority of the California fruits over those of the East, and the improved facilities lately introduced for shipping fruits a great distance by rail, are affecting most favorably this industry in our State.

Again, our growers are learning by experience the varieties best adapted to the different localities and climates of our State, and to the markets upon which they depend for sales, and are grafting and budding and improving their orchards and fruit accordingly. They are also learning and adopting a better system of economy in management. Less fruit is now allowed to go to waste in the orchards than formerly. It is either dried or fed to stock or made into vinegar, and thus in one way or another made to swell the profits of the year's operations.

FRUITS IN THE MOUNTAINS.

The display of fruits at the last State Fair from our mountain counties made one of the most valuable and interesting features of the exhibition. A comparison of the same varieties with those raised in the valleys, illustrated very strikingly the superiority of the former in many respects over the latter. The mountain fruit is more highly flavored, more compact and finer grained, and more tart and juicy. The mountain fruit ripens much later, and is also much superior to that of the valley in keeping qualities. The same varieties of apples, for instance, that ripen in the valleys in September, when raised in the mountains as high up as Placerville, will keep well until February or March and even later, before becoming mellow and good for eating purposes. This latter fact is one of immense value to our State as a fruit growing country, and will in time drive the Oregon winter apples entirely out of our markets. It will enable us to enjoy a plentiful supply of green apples through the entire year. The imperfect means at the command of the Board for collecting reliable statistics of many of our products, render it impossible for us to report even approximately as to the quantity or value of the fruit raised in the State. As an illustration of the adaptability of the foothills and mountains to this industry, and the proportions it is assuming in these districts, we are assured that during the months of August, September, and October last, from the orchards and vineyards within a radius of six miles about the City of Placerville, there was picked and marketed over one hundred thousand dollars worth of fruits. The value of the dried and winter fruits produced within the same districts, it is said will probably equal this amount. Add to this the value of the wines and brandy made within this same radius, and from grapes sold and shipped to Sacramento for manufacture, estimated at fifty thousand dollars more, and we have the sum of two hundred and fifty thousand dollars as the value of the product of fruit culture in a small section of one of our mountain counties which but a few years ago contained not a fruit tree or a vine, and was considered worthless except for the gold that could be mined from its soil. When we state that a very large proportion of the land embraced within this same section is still unoccupied and subject to be purchased at government rates, and that not one out of twenty of the occupied places contains bearing orchards or vineyards, some idea of the vast agricultural and horticultural resources of the mountain districts of our State may be formed. It is a remarkable fact that the owners of nearly

every one of the most valuable orchards and vineyards that have produced these astonishing results made their beginning in a small way, as doubtful experiments. With no other capital but good health and a will to work, they have, by patient economy, frugality, and persevering industry, accumulated valuable fortunes for themselves and at the same time become benefactors to their fellow men. Let those of our fellow citizens who are without labor, if they would enjoy like thrift and prosperity, imitate their example.

SHEEP HUSBANDRY.

This is another industry well adapted to our climate, and one that has proved very successful and profitable here. The seasons are so mild and favorable that the increase is very rapid, and the ranges have been generally so good heretofore that flocks have not required any additional food. The wool has as a general thing considerably more than paid all expenses of keeping, herding, and shearing the flocks, while the increase of sheep, with good care, has averaged at least seventy-five per cent per annum. Those who ten years ago started in the business with a few hundred head of sheep and have remained in it, can now count their flocks by the thousands and tens of thousands. Of late years, however, a considerable difficulty has been experienced by the owners of large flocks to secure sufficient pasture for them. The ranges have been curtailed by the appropriation of the public lands for other agricultural purposes, and owners of sheep are finding it necessary to seek other ranges or buy the land required to support their flocks. Without some precaution or provision for an unfavorable season like that of eighteen hundred and sixty-three and eighteen hundred and sixty-four, or the fore part of the present Winter, the owners of large flocks are most certain to meet with heavy losses whenever such seasons occur. Again, by allowing the condition of the sheep to become low, the staple of the wool clip of the succeeding shearing is materially injured. These circumstances point to the necessity of adopting a different system of sheep husbandry. We would suggest the seeding down portions at least of ranges to alfalfa, some of which might be used for pasture during the season when the natural grasses are the poorest, and portions for cutting hay to be used when it may become necessary. We would here also repeat our former recommendations—that the farmers of the State enter upon the practice of keeping small flocks of sheep on their farms in connection with their cows, hogs, and other farm stock. Thus they will diversify and increase the industries and multiply the sources upon which they depend for the receipts and profits of the farm. They may also in this way provide a ready supply of meats for their families at all times without even feeling the cost. A few acres of Chile clover set aside as a general stock pasture and a stack of wheat straw will be about all the provisions necessary to keep up a respectable supply of the live stock for the farm.

WOOL.

While, for want of reliable information on the subject, we are unable to state the number of sheep in the State, or the increase from year to year, we are able from commercial reports to give the annual wool clip, and thus indirectly show the rapid increase of our flocks. During the five years commencing in eighteen hundred and sixty-three and ending with eighteen hundred and sixty-eight, the average annual increase of

our wool clip was one million five hundred and ninety-one thousand three hundred and forty-two pounds. The clip of eighteen hundred and sixty-eight was fourteen million two hundred and thirty-two thousand and fifty-seven pounds, while that of eighteen hundred and sixty-nine was fifteen million four hundred and thirteen thousand nine hundred and seventy pounds, showing an increase in that year of only five hundred and twenty-two thousand six hundred pounds. This falling off in increase was attributable to scarcity of food on the ranges and consequent poor condition of the sheep. The clip of eighteen hundred and seventy shows a larger increase than on any previous year, the clip of the latter year being twenty-one million eight hundred and seventy-two thousand six hundred and sixty pounds. The value of the wool exported in the last three years is, respectively, two million four hundred and thirty-six thousand five hundred and ninety-four dollars, two million three hundred and seventy thousand one hundred and sixty-five dollars, and three millions six hundred and fifty-five thousand dollars. It will be seen that the value of wool exported in eighteen hundred and seventy appproximates to one half of the value of wheat exported in the same year. It is stated by those best able to judge in the premises that very fine blooded flocks deteriorate rapidly in this State, and that very fine wooled sheep are consequently not so well suited to our dry climate as those of medium grades. In view of these facts it is suggested that an infusion of blood of long wooled sheep would be an improvement to most of the flocks of the State.

COTTON.

Experiments in the cultivation of cotton have been successfully made on a small scale in all the valley portions of our State. In eighteen hundred and sixty-four several parties, stimulated by the premiums offered by the Legislature, planted in some of the southern counties as high as a hundred acres each. They all labored under the disadvantages of want of experience and skill in the business, and want of good seed of the varieties adapted to our soil and climate, besides many other adverse circumstances that always attend the introduction of new industries into new countries on a large scale without proper previous preparation. The results of these large experiments were more than could have been expected under the circumstances.

The crops from the seed of the varieties known as the Petit Gulf and Tennessee Upland were more than an average of crops from the same variety grown in the Southern States. The quality was pronounced by experienced judges good.

Owing to the difficulties of securing, preparing, and marketing the cotton, and there being no longer any hope of encouragement by the State, the cultivation was abandoned. Experiments have been made in the Merced Valley during the past season, however, by a gentleman of great experience in cotton culture in the Mississippi Valley, which prove to his entire satisfaction that nearly all of our great river bottoms are peculiarly adapted to the successful and profitable prosecution of this industry. The average yield of cotton per acre in the Mississippi River bottoms is two hundred pounds, while by the experiment referred to five hundred pounds was produced per acre. The product was sent for examination to the Board of Cotton Brokers of Memphis, Tennessee, and was by them pronounced equal to the best "Middling Upland" of the South, the staple being finer. It has been generally the received

opinion in the South that a good supply of Summer rains was indispensable to the successful production of cotton; but the experiments made here have proved the fallacy of this theory, and seem to point to its opposite as more correct, that cotton produced without Summer rains is superior.

The Petit Gulf Seed, and varieties derived from it, are recommended for planting in this country.

Quite a large breadth of land in the Merced Valley will be planted to cotton the coming Spring, and we indulge strong hopes of its satisfactory success. Its general cultivation would be of great value to the State, both to agricultural and manufacturing industries. It would furnish employment to labor during those portions of the year when such employment is now most difficult to obtain. Until our industries are so diversified and multiplied as to give labor employment the year round California can never come up to a proper maximum of prosperity.

RAMIE.

This textile plant has been experimentally cultivated by a few individuals in the State during the past year. The result seems to be satisfactory as to its adaptability to our soil and climate. The great obstacle to the general cultivation of this most valuable fiber has been the want of proper machinery to separate and prepare it for manufacture. When this machinery shall be introduced, we have no doubt its cultivation will become a valuable acquisition to California.

FOREST CULTURE.

In our report to the Legislature a year since, we gave this subject a full and careful consideration. In view of the rapid consumption and destruction of timber on this coast, and the natural climatic influences operating against the reproduction of natural forests, we deem it of the utmost importance that artificial forest culture shall be fostered and encouraged in every possible manner. We believe that as a strictly financial operation the cultivation of forests for timber, lumber, and wood in this State may be made eminently successful.

For the purpose of calling the attention of our landowners to this subject, the Board, last Spring, offered fifty dollars for the largest quantity of useful forest trees planted during the year.

We have now three claimants for this premium: E. F. Aiken and Thomas Edwards, of Sacramento county, and James T. Stratton, of Alameda county. Aiken states that he has planted of Lombardy poplar and Balm of Gilead, five thousand; multicaulis, seven thousand five hundred; morus alba, twenty-five hundred; California black walnut, ten thousand; American white maple, four thousand; American white elm, five thousand; English elm, two thousand; Spanish chestnut, four hundred; American chestnut, five hundred. He remarks: The last five varieties were imported from the Atlantic States at considerable expense and planted in March last, and have done so well that I have ordered several thousand to set out the coming season. The elm and maple have grown from four to seven feet this season.

Edwards proves that he has seven thousand locust trees, half one and half two years old since they were planted out in the form of a forest, being some four years old from the seed. They are planted in rows alternately eight and ten feet apart, and four feet apart in the rows.

Edwards' trees are doing well. He estimates the probable expense of care and cultivation at about ten dollars per year, and remarks that in ten years he expects to have fence posts enough to fence all his own land and some to spare for his neighbors.

Stratton proves that he has planted out on fifty-three and a half acres of land thirty thousand blue gum (or eucalyptus globulus) trees, and three thousand red gum trees. His trees were planted in forest form during the last planting season, and were in August last on an average four and a half feet high. They are planted eight feet apart each way. They were grown from seed gathered in December, eighteen hundred and sixty-eight, from trees belonging to Stratton then seven years old. Stratton estimates the cost at about one hundred and fifty dollars per acre before any revenue will have been derived from them, which he thinks will probably be in about seven years. The eucalyptus is a native of Australia, where it is considered a very valuable forest tree, being used extensively for piling, flooring, and other purposes. Thus it will be seen that we have made a beginning in the cultivation of artificial forests.

IMPROVEMENTS IN STOCK.

The annual exhibition of stock, both horses and cattle, at the State Society Fair the past few years have shown most conclusively that California is not surpassed by any other portion of the world as a stock growing country. The appearance on the Fair grounds at the last exhibition for the first time of many superior specimens of imported thoroughbred horses, cattle, and sheep indicates that our people fully appreciate the advantages to be secured by the introduction of the best breeds of animals. The improvement indicated in our California bred colts over their dams and sires and creditable performances on the track speak well for the judgment and intelligence of our stock breeders and give promise that California may at no distant day present the best turf record of the world.

GENERAL CONDITION OF THE STATE.

It was generally anticipated that the completion of the Pacific Railroad would bring to our shores a large immigration from the eastern States, introduce among us a large additional circulating capital, and consequently give a general impulse to business on this coast. For reasons now generally understood and much to be regretted, these anticipations have not been realized to the extent expected. On the contrary, our merchants, manufacturers, mechanics, and many classes of our agriculturists found themselves, by this event, brought face to face in sharp competition with the merchants, manufacturers, mechanics, and agriculturists of the eastern States, not only in the general commerce of the world, but in supplying thousands of necessary articles of consumption, wear, and use to the people of the States and Territories of the Pacific slope. Our eastern competitors had the advantage of us in many respects. Their habits of living were more frugal and economical; their modes of business more close and careful. Their products had been made by cheaper labor. They were satisfied with less profits. While the money with which all their business operations were carried on and sustained was rated at an interest of but six and seven per cent per annum, that with which we were operating was rated at from twelve to fifteen per cent. With such odds against us it could not be

otherwise than that all our industries would feel the effects of the contest. They did feel it. General disappointment at the turn things had taken ensued, and general depression of all kinds of business was the consequence. The natural resources of the State are too great and valuable to lie dormant. The determination, perseverance, and energy of our people cannot be conquered, and we now see on all sides evident indications of change for the better. Greater prudence and economy in life and business is the order of the day. Large tracts of land, heretofore held at extravagant speculative prices, are being broken up into small farms and sold for agricultural purposes at reasonable rates. A greater variety and diversity of agricultural and mechanical industries are being introduced. A healthy commerce is growing up between the Pacific and Atlantic States, to the mutual advantage of all The surplus capital of foreign countries is feeling and preparing its way for safe and permanent investment among us, and promises to reduce to reasonable rates the interest on money. Rents and labor are moderating their demands in accord with the general changes of the times, and the Board feel warranted in congratulating the people of the State upon the flattering prospects of substantial progress and improvement in the immediate future.

PERMANENT IMPROVEMENTS.

During the past year the Board have made many valuable improvements and additions to the society's property. In connection with the county, which has always manifested the most enlightened liberality toward the society, an addition has been made to the pavilion which has increased the capacity of the building for exhibition purposes one half. Other improvements of an important and permanent character have also been made to the building. At the park all the stalls have been raised and furnished with permanent roofs and doors. Over the different gateways, other than the main entrance and exit gates, have been constructed comfortable sleeping apartments for the accommodation of grooms and others having the care of valuable stock during the Fairs. Also, new and appropriate judges', reporters' and visitors' stands have been erected, and other valuable and necessary improvements of a permanent character made. The expense to the society for these improvements has been the sum of six thousand dollars.

PURCHASE OF REAL ESTATE.

The northern half of the inclosed grounds used by the society has heretofore belonged to an association known as the Union Park Association. The original cost of the property to the association was seven thousand two hundred dollars, divided into seventy-two shares of one hundred dollars each. By an understanding at the organization of the association, the society were to have the free use of the ground for purposes of the Fair for an indefinite time, but the rents went to the association. The society have purchased fifty-two shares of the property at the original cost, or five thousand six hundred dollars, and will probably be able to obtain the remaining sixteen shares at the same rate. The south half of the park grounds are held by the society under a lease of ninety-nine years, at a nominal rent. The whole park has been rented for the ensuing year for three thousand six hundred and sixty dollars; the lessee at his own expense to put the whole place in condition for the society's Fair.

FINANCES OF THE SOCIETY.

Balance in treasury January 30th, 1870		$61 84
Unexpended appropriations		2,838 00
Total receipts for the year		33,932 60
Cash assets for the year		$36,879 44
CONTRA.		
Incidental expenses	$28,428 68	
Permanent improvements	6,000 00	
Paid for real estate	5,600 00	
Total expenditures		40,028 68
Deficit in treasury		$3,149 24

The State owes the society a balance of undrawn appropriations for the year—which will soon be paid—of three thousand dollars. This will reduce the deficit in the treasury, or the debt of the society, to one hundred and forty-nine dollars and twenty-four cents.

THE FAIR FOR EIGHTEEN HUNDRED AND SEVENTY-ONE.

The Board propose, with the assistance of the people of the State, to make this Fair a real exposition of all the industries of the State. To this end a new and comprehensive premium list will be prepared and published at once, embracing the products of every industry on the coast, and offering liberal premiums for their exhibition. By personal correspondence, circulars, and an extensive distribution of premium lists, we propose to reach the representatives of every industry on the coast, and endeavor to wake up in them a renewed and earnest interest in their development, and in the general exhibition of samples of their products at the coming Fair. We propose also to secure the service of a reliable and competent person to visit in behalf of and as a representative of the Board every important locality in the State, for the double purpose of enlisting the active coöperation of all the people in behalf of the efforts of the society, and collecting valuable facts and statistics of our industries and resources for publication and general distribution at home and abroad. In the furtherance of these objects we shall endeavor to establish a perfect good understanding between the State Society and each of the District and County Societies now organized in regard to the times of the exhibitions of each, and to form some general plan by which each of such societies may be represented by the products of the industries embraced in their district at the general exhibition of the State Society. To secure the success of this plan we hope to induce the organization of industrial societies embracing every county in the State. With such a system of societies, organized for such purposes, and directed with an honest purpose for their accomplishment, it is believed that the labor, skill, and capital of our people can be rendered much more productive.

FINANCIAL REPORT

OF THE

STATE AGRICULTURAL SOCIETY

FOR

THE YEAR 1870.

Date.	On what account.	Amount.
1870.	RECEIPTS.	
January 30.....	Unexpended appropriations.....	$2,883 00
"	From Dr. Renz.....	6 00
"	Robert Allen, rent of Park.....	500 00
"	Memberships.....	930 00
May 30.....	Robert Allen, rent of Park.....	500 00
July 20.....	Robert Allen, rent of Park.....	300 00
August 18.....	Rebate on currency.....	1 00
September 5.....	Samuel Poorman, pool privilege.....	2,000 00
September 12...	For bar privilege.....	85 00
"	Remittance to I. N. Hoag, returned from Auburn.....	50 00
"	Receipts at Park, Thomas Hall.....	1,990 00
"	Receipts at Pavilion, J. Smith.....	1,925 50
"	Entries to races.....	520 00
September 13...	Receipts at Park.....	2,140 00
"	Receipts at Pavilion.....	1,352 50
"	Entries to second race added.....	500 00
"	Entries to third race.....	480 00
September 14...	Receipts at Park.....	1,961 00
"	Receipts at Pavilion.....	1,186 50
"	Entries to races.....	680 00
September 15...	Receipts at Park.....	2,353 75
"	Receipts at Pavilion.....	1,191 50
"	Entries to first and second races.....	670 00
"	Entries to third race added.....	300 00
September 16...	Receipts at Park.....	1,739 30
"	Receipts at Pavilion.....	850 50
"	Entries to races.....	440 00
September 17...	Receipts at Park.....	1,017 25

Date.	On what account.	Amount.
September 17...	Receipts at Pavilion	$361 50
"	Entries to races	890 00
"	Purses returned	542 00
"	Cider privilege	52 20
"	Rent of refreshment room	25 00
"	Balance from J. E. Smith	10 50
"	Collected for memberships sold at election	15 00
"	Memberships sold since election	85 00
"	State warrant	5,000 00
"	Robert Allen, rent of Park	489 00
"	Robert Allen, balance of rent	411 00
"	R. S. Carey, rent	26 00
"	J. C. Carroll & Co., rent feed house	50 00
January, 1871...	A. A. Wood, rent of Park	305 00
		$36,815 30
	Balance in hands of Treasurer at last election	61 84
	State appropriation not yet received	3,000 00
		$39,877 14
	Amount of indebtedness	151 54
	Total	$40,028 68

Date.	On what account.	Amount.
1870.	CASH PAID TO TREASURER.	
		$2,883 00
January 30.....	R. T. Brown, Treasurer, as per receipt.....	500 00
January 30.....	R. T. Brown, Treasurer, as per receipt.....	930 00
May 30.....	R. T. Brown, Treasurer, as per receipt.....	500 00
August 2.....	R. T. Brown, Treasurer, as per receipt.....	300 00
September 5.....	R. T. Brown, Treasurer, as per receipt.....	2,000 00
September 12...	R. T. Brown, Treasurer, as per receipt.....	3,915 50
"	R. T. Brown, Treasurer, as per receipt.....	1,460 00
September 13...	R. T. Brown, Treasurer, as per receipt.....	3,492 50
"	R. T. Brown, Treasurer, as per receipt.....	570 00
September 14...	R. T. Brown, Treasurer, as per receipt.....	3,125 00
September 15...	R. T. Brown, Treasurer, as per receipt.....	3,575 25
"	R. T. Brown, Treasurer, as per receipt.....	1,700 00
September 16...	R. T. Brown, Treasurer, as per receipt.....	2,589 80
September 17...	R. T. Brown, Treasurer, as per receipt.....	1,456 25
"	R. T. Brown, Treasurer, as per receipt.....	1,472 00
October 8.....	R. T. Brown, Treasurer, as per receipt.....	26 00
October 10.....	R. T. Brown, Treasurer, as per receipt.....	489 00
November 1.....	R. T. Brown, Treasurer, as per receipt.....	411 00
November 14...	R. T. Brown, Treasurer, as per receipt.....	50 00
"	R. T. Brown, Treasurer, as per receipt.....	11 50
1871.		
January 3.....	R. T. Brown, Treasurer, as per receipt.....	5,000 00
"	R. T. Brown, Treasurer, as per receipt.....	305 00
January 23.....	R. T. Brown, Treasurer, as per receipt.....	53 50
		$36,815 30
	Balance in hands of Treasurer at last election	61 84
	Total.....	$36,877 14

Date.	On what account.	Amount.
1870.	DISBURSEMENTS.	
January 30.....	Robert Beck's salary for January.....	$150 00
"	W. B. Ready, premium.....	10 00
"	John N. Andrews, engraving.....	30 00
"	I. N. Hoag, balance for writing report, 1868 and 1869.....	200 00
February 7.....	E. S. Bingham, premium.....	5 00
February 8.....	Withington & Bagley, premium.....	2 00
"	Crump, fixing seats for election.....	1 00
"	Thomas Hall, clerk at election.....	5 00
"	B. Bullard, clerk at election.....	10 00
February 17.....	Mrs. Graham, premium.....	40 00
February 22.....	Robert Beck, salary for February.....	150 00
March 4.....	Mrs. Cronkite, premium.....	3 00
March 7.....	*Daily Record*, advertising.....	3 00
March 8.....	D. Gardiner, wood.....	12 00
March 29.....	J. S. Harbison, trees and planting.....	30 00
April 1.....	Robert Beck, salary for March.....	150 00
April 2.....	F. Foster, binding books.....	37 50
April 12.....	Post Office bill.....	8 00
April 18.....	*Sacramento Reporter*, advertising.....	3 00
April 27.....	Henry Freeman's bill.....	10 00
May 4.....	Robert Beck, salary for April.....	150 00
May 12.....	Express envelops and ink.....	6 50
"	Postage stamps, currency, $5.....	4 50
May 19.....	Robert Beck, salary for May.....	150 00
June 7.....	W. A. Latin, premium.....	5 00
June 18.....	R. J. Merkely, premium.....	25 00
June 29.....	100 Wells, Fargo & Co.'s envelops.....	5 00
"	100 postage stamps, currency, $3.....	2 70
"	350 postage stamps, currency, $7.....	6 30
"	Express charges on "Trotting Rules".....	75
July 1.....	Robert Beck, salary for June.....	150 00
July 9.....	W. Fern, premium.....	15 00
July 13.....	J. N. Andrews, engraving.....	3 12
July 18.....	Thomas Edwards, premium.....	30 00
July 26.....	Miss M. Myers, premium.....	10 00
July 30.....	Rippon & Hill's bill.....	13 00
August 1.....	R. Walton's bill, lumber.....	15 00
"	250 postage stamps, currency, $5.....	4 50
"	100 Wells, Fargo & Co.'s envelops.....	5 00
"	Latch key to office.....	75
"	Grinding scissors.....	50
"	National Turf Congress Rules.....	30 00
August 2.....	D. O'Connor, carpenter.....	3 00
"	Robert Beck, salary for July.....	150 00
August 4.....	Insurance on Park buildings.....	160 00
August 15.....	P. Chatterton, carpenter.....	40 00

Date.	On what account.		Amount.	
August 18.....	Wilkes' *Spirit of the Times*, advertising, currency.....	$118 75		
"	Admission fee to National Turf Congress, currency.....	75 00		
"	Post office order for above.....	1 00		
	Currency.....	$194 75	$175	28
August 20.....	R. Walton & Co., lumber.....		100	46
"	I. N. Hoag, canvassing, on account.....		50	00
August 23.....	Post office bill.....		8	00
"	Mrs. Shipman, premium.....		3	00
"	Booth & Co., bill of shakes.....		500	00
"	B. Dennery's bill of spittoons.....		6	00
August 30.....	I. N. Hoag, on account of canvassing.....		50	00
September 1...	R. Beck, salary for August and September...		300	00
September 5...	P. Chatterton, on account, carpenter.....		40	00
September 8...	H. S. Crocker & Co., stationery, etc.....		34	00
September 10...	James Contell, show cases.....		140	00
September 12...	F. M. Henderson, carpenter.....		16	50
September 13...	W. A. Mott, washing drilling.....		10	00
September 15 ..	James McGinn, labor.....		12	00
September 19...	I. N. Hoag to W. P. Coleman, on account....		50	68
	To W. P. Coleman, the following bills:			
"	A. Hamburger's.....	$28 25		
"	B. Hamburger's.....	8 25		
"	Joseph Bailey's.....	7 00		
"	G. C. Hall's.....	1 75		
"	Mrs. F. Blackleach's.....	16 00		
"	Badger's.....	1 25		
"	Bert. Nevell's.....	21 60		
"	R. Dale's.....	5 25		
			89	35
"	H. O. Hale, building ticket office.....		136	46
"	David Woods, carpenter.....		162	50
"	R. P. Wingate, Marshal at Park.....		30	00
"	James H. Johnson, cleaning Pavilion.....		50	00
"	C. T. Jennings, Entry Clerk, lower Hall.....		36	00
September 20...	Samuel Deal, main gatekeeper.....		30	00
"	S. Jones, labor at Hall.....		6	00
"	James Miller, police.....		18	00
"	S. D. Van Horn, police.....		24	00
"	W. F. Knox, on account of new roof.....		500	00
"	F. S. Lardner, Superintendent upper Hall....		70	00
"	Mrs. M. E. Jackson, chambermaid.....		15	00
"	P. Canagher, police.....		9	00
"	G. G. W. McCurdy, doorkeeper.....		32	00
"	Norton Bush, premium.....		25	00
"	P. W. Burnett, fixing shafting.....		137	00
"	Thomas Hall, Ticket Clerk at Park.....		30	00
"	George T. Glover, Ticket Clerk at Park.....		24	00

Date.	On what account.	Amount.
September 20...	Thomas Byrne, labor at Hall	$33 00
"	Henry France, engineer	82 50
"	Wachhorst's bill	82 50
"	J. W. Andrews' bill	12 50
"	A. C. Bidwell, gatekeeper	30 00
"	John Shellars, police	18 00
"	J. T. Carey, Entry Clerk	40 00
"	N. V. Hatch, carpenter	122 50
"	N. R. Hathaway, carpenter	88 50
"	W. S. Gray, fireman	9 00
"	W. J. Wallace, Ticket Clerk at Park	24 00
"	J. W. Taylor, gatekeeper	30 00
"	H. McKeune, carpenter	12 00
"	H. Lane, labor	30 00
"	Patrick Lynch, labor	42 00
"	Howard Campion, premium	25 00
"	H. M. Willard, stairkeeper	18 00
"	William Mace, doorkeeper	32 00
"	George Bingham, fireman	27 00
"	Barney Flinn, labor	36 00
"	S. F. Hyde, gatekeeper	24 00
"	Isaac Galloway, labor	18 00
"	R. P. Bartlett, police	18 00
"	C. L. Knowles, Superintendent	50 00
"	Maurice Conner, labor	54 00
"	A. H. Norton, carpenter	33 00
"	P. Chatterton, carpenter (balance)	152 00
"	P. W. Cafferty, police	18 00
"	Robert Williamson, premium	129 00
September 26...	W. H. Duncan, Clerk in Secretary's office	168 00
"	Russell & Winterburn, printing bill	328 00
"	Van Every & Son, premium	5 00
"	Jesse Slaughter, whitewashing, etc	54 00
"	G. W. Whitlock, decorating hall, etc	69 00
"	Sacramento *Reporter*, advertising	69 50
"	San Francisco *Spirit of the Times*, advertising	80 00
"	W. I. Stoddard, canvassing San Francisco	100 00
"	Miss Landon, premium	5 00
"	F. M. Chapman, livery bill	42 00
"	Sacramento Gas Company, gas bill	225 00
"	P. J. Hopper, advertising	12 00
"	Parker & Hunt, premium	20 00
"	J. E. Smith, Ticket Clerk	30 00
"	E. H. Pomeroy, Ticket Clerk	25 00
"	David Bush, gas fixtures (on account)	500 00
"	S. E. Harvey, stairkeeper	18 00
"	James Anthony & Co., advertising, etc	259 50
"	H. S. Crocker & Co., stationery, etc	54 75
"	Marysville *Standard*, advertising	15 00
"	John Bruener, rent of furniture, etc	68 50

Date.	On what account.	Amount.
September 26...	Whittier, Fuller & Co., glazing	$ 25 80
"	I. N. Hoag, balance of bill, as audited	134 32
"	John F. Wall & Co., sawdust	24 00
"	J. M. Eckfelt, screen wire	153 48
"	*Northern Enterprise*, advertising	7 50
"	Stockton *Independent*, advertising	12 00
"	George Schmeiser, on account of bill	250 00
"	James McGuire, for bell	102 50
September 27...	William Caswell, bill posting	26 00
"	W. P. Michenor, drilling	25 73
"	Cadwalader & Leonard, office rent, etc	31 50
"	*Petaluma Journal*, advertising	6 00
"	*Daily Record*, advertising	62 75
"	Hamburger & Co.'s bill	50 20
"	Locke & Lavenson's bill	281 55
"	Huntington & Hopkins' bill	35 64
"	Baker & Hamilton's bill	24 75
"	R. Watson & Co., lumber	58 56
"	William Crump, watchman	40 00
"	A. S. Greenlaw, premium	20 00
"	John Isaacs, police	30 00
"	R. L. Bampton, stairkeeper	14 00
"	David Cross, draying	6 00
"	S. H. Davis, hardware bill	248 46
"	Orleans Hill Vinicultural Association, premium	40 00
September 28...	Keyt & Co., distributing posters	5 50
"	Thomas May, draying	4 50
"	A. Brokaw, police	27 00
"	A. H. Estell, Entry Clerk at Park	30 00
"	J. H. Sullivan, baluster	6 75
"	B. F. Cummings, making purses	10 00
"	W. D. Comstock, bedstead hire	2 50
"	D. G. Webber, straw bill	192 25
"	John Shellers, police	6 00
"	William Harron, Clerk at Park	30 00
"	*Sacramento Journal*, advertising	15 00
"	W. L. Smith, paper hanging, etc	21 27
"	T. D. Scriver, hack hire	42 50
"	W. I. Stoddard, express	9 75
"	*San Francisco Chronicle*, advertising	56 00
"	W. H. Keep, premium	10 00
"	David Bush, on account	500 00
"	*Daily Bee*, advertising	37 00
"	A. J. Holland, police	9 00
"	G. W. Leitch, extra night watch	6 00
September 29...	George Schmeiser, on account	60 00
September 30...	Charles Heinrich, premium	10 00
"	J. S. Bamber, premium	18 00
"	Peter Humrich, hack hire	25 00

Date.	On what account.	Amount.
October 1.....	*San Francisco Bulletin*, advertising.....	$42 00
"	F. S. Malone, livery bill.....	32 50
"	P. Johnson, labor.....	21 00
"	W. H. Duncan, clerk.....	18 00
"	George Herged, wood.....	66 00
"	John Smith, premium.....	8 00
October 7.....	Hunt & Anderson's bill.....	37 00
"	Robert Anderson's bill.....	174 74
"	Miss Emmons, premium.....	10 00
"	C. H. Krebs, bill.....	30 00
"	Nell Flaherty's entry returned.....	80 00
"	N. L. Drew & Co., on account of lumber.....	1,000 00
"	George Schmeiser, balance of bill.....	52 23
"	James Contell, making stand.....	85 38
"	H. Smith, carpenter.....	4 00
"	T. D. Scriver, bill.....	7 50
"	J. R. Nickerson, premium.....	75 00
"	M. T. Barr, premium.....	3 00
"	S. Ryan, carpenter.....	6 00
"	Henry Austin, carpenter.....	7 50
"	Barney, carpenter.....	4 00
October 10.....	O. Hannaghan, carpenter.....	6 00
"	C. Smiley, carpenter.....	4 00
"	N. L. Drew, balance of bill of lumber.....	392 00
"	Estate of C. C. Freeman and J. Sims, hay.....	644 50
"	J. W. Avery, lumber.....	43 50
"	S. Wilinski, premium.....	5 00
"	A. J. Steiner, premium.....	10 00
October 12.....	C. F. Reed, expenditures.....	1,000 00
October 14.....	Casey & Dwyer, nails.....	5 37
"	O. Bonney, premium.....	10 00
"	B. Bullard, Assistant Secretary.....	84 00
"	H. Stone, premium.....	15 00
"	L. Sweeny, premium.....	20 00
October 17.....	California Jewelry Company, medals.....	309 00
"	John Bruener, premium.....	120 00
October 18.....	C. H. Wattles, carpenter.....	6 00
"	Mrs. Boggs, premium.....	10 00
"	W. B. Ready, premium.....	20 00
"	M. S. Bowdish, premium.....	10 00
"	D. Flint, premium.....	80 00
"	J. Hutchinson, premium.....	20 00
"	Mrs. W. E. Brown, premium.....	30 00
"	George West, premium.....	10 00
"	Friend & Terry, lumber.....	5 18
"	George H. Baker, lithograph and diplomas...	416 00
"	J. Creighton, premium.....	15 00
"	Robert Beck, bill of expenditures.....	120 50
"	Robert Beck, salary for October.....	150 00

Date.	On what account.	Amount.
October 18.....	Enoch Dole, police.....	$18 00
"	Pacific Quartz Company, roofing.....	90 00
"	H. Ramsay, police.....	6 00
"	Pioneer Mills, premium.....	10 00
"	Mrs. Powers, for Mrs. Jones, premium.....	5 00
September 16...	L. Wilson, carpenter, ten days at $4.....	40 00
September 19...	E. Brown, to mend chair broken while on exhibition.....	1 00
"	J. P. Rainbow, mend swing broken while on exhibition.....	5 00
"	D. Clark, policeman, 6 days at $3.....	18 00
"	O'Brian, drayage at Park.....	30 00
"	J. R. Saunders, carpenter, 9½ days at $4.....	37 00
"	A. M. Womble, Ticket Clerk at Hall, 6 days at $3.....	18 00
"	J. R. Nickeson, membership overpaid.....	5 00
"	William Toll, stairkeeper, 6 days at $3.....	18 00
"	J. P. Brissell, police, 6 days at $3.....	18 00
"	William Parker, police, 5 days at $3.....	15 00
"	J. H. Johnson, police, 7 days at $3.....	21 00
"	R. H. Babbit, police, 6 days at $3.....	18 00
"	E. Buttler, police, 6 days at $3.....	18 00
"	George Faylor, police, 6 days at $3.....	18 00
"	W. A. Faylor, police, 6 days at $3.....	18 00
"	B. F. O'Dell, police, 4 days at $4.....	16 00
"	G. W. Leitch, stairkeeper, 6 days at $3.....	18 00
"	C. L. Dell, Ticket Clerk, 6 days at $3.....	18 00
"	B. H. Murphy, for glass box broken while on exhibition.....	2 50
"	M. Richardson, labor.....	8 50
"	G. F. Lang, stairkeeper, 6 days at $3.....	18 00
"	James Connell, police, 3 days at $3.....	9 00
"	J. W. Perry, labor, 7 days at $3.....	21 00
"	G. M. Cornwall, carpenter, 8 days at $4.....	32 00
"	Frank Swift, doorkeeper.....	22 00
"	H. M. Bernard, water tank hinges.....	5 00
"	D. F. Gillis.....	5 00
"	E. W. Walton.....	10 00
"	J. H. Wolf.....	19 00
"	D. L. Perkins.....	28 00
"	Mrs. William Yule.....	10 00
"	J. C. Devine.....	55 00
"	S. W. Shaw.....	10 00
"	Nash, King, Miller & Co.....	10 00
"	David Fulton.....	5 00
"	Mrs. Goldsmith.....	5 00
"	P. Philips.....	3 00
"	O'Brian & Dalton.....	40 00
"	Miss Jennie Bradley.....	5 00
"	Nichols, Falvey & Co.....	10 00

Date.	On what account.	Amount.
September 19...	T. B. Jackson	$ 5 00
"	D. H. Woods	65 00
"	Mrs. E. Ellis	10 00
"	Miss Helen Low	3 00
"	E. Brown	5 00
"	Pollard & Carvill	50 00
"	Theodore Lerond	50 00
"	Jacob Zeck	60 00
"	Mrs. E. F. Aiken	46 00
"	T. K. Stewart	9 00
"	E. F. Aiken	5 00
"	N. Clark & Co	8 00
"	Baker & Hamilton	25 00
"	C. H. Hubbard	20 00
"	J. W. Sursea	15 00
"	Matteson & Williamson	30 00
"	C. W. Hoyt	33 00
"	R. J. Merkley	5 00
"	Mrs. Odbert	3 00
"	John F. Cooker	5 00
"	A. B. Gilbert	35 00
"	E. W. Gavitt	25 00
"	W. Cites	5 00
"	E. Soule	25 00
"	J. C. Meussdorffer	5 00
"	D. H. Quinn	5 00
"	D. S. Moulton	5 00
"	Mrs. Odbert	6 00
"	A. T. Cotton	15 00
"	Hobson & Ayres	20 00
"	B. Dennery	10 00
"	Mrs. A. S. Morrison	2 00
"	S. H. Davis	10 00
"	Nathan Coombs	75 00
"	L. P. Marshall	50 00
"	John Hall	40 00
"	J. Glucauf	30 00
"	John Hall	20 00
"	John Glucauf	60 00
"	John Dixon (Emma Barnes)	40 00
"	George Treat	50 00
"	John Hall	30 00
"	John Glucauf	25 00
"	Theodore Winters	20 00
"	Theodore Winters	100 00
"	Theodore Winters	60 00
"	David Frame	75 00
"	Alexander Ely	50 00
"	D. W. Downey	40 00
"	R. H. Branton	20 00

Date.	On what account.	Amount.
September 19...	George McWain	$30 00
"	L. Upson	20 00
"	L. Upson	15 00
"	Peter Burnes	10 40
"	C. B. Hoffman	50 00
"	D. Berry	40 00
"	Alexander Ely	30 00
"	M. E. LaMurray	20 00
"	Alexander Ely	$20 00
"	Alexander Ely	40 00
"	C. H. Shear	50 00
"	C. B. Hoffman	30 00
"	Alexander Ely	20 00
"	Alexander Ely	15 00
"	Henry Meacham	40 00
"	C. Barr	30 00
"	A. T. Nordyke	20 00
"	J. N. Dudley	15 00
"	Maurice Haley	40 00
"	R. A. Branton	15 00
"	E. M. Skaggs	50 00
"	J. Colgrove	40 00
"	J. Colgrove	40 00
"	S. B. Whipple	40 00
"	J. Colgrove	30 00
"	F. W. Hatch	20 00
"	H. W. Hawkins (fine bridle)	
"	A. A. Trobridge	20 00
"	Alexander Ely	15 00
"	N. Coombs	150 00
"	E. Jacobs	50 00
"	Tom Edwards	40 00
"	E. Jacobs	20 00
"	R. J. Houston	15 00
"	C. Youngers	75 00
"	C. Youngers	40 00
"	Clark & Cox	30 00
"	G. N. Sweezy	25 00
"	C. Youngers	15 00
"	C. Youngers	50 00
"	G. N. Sweezy	40 00
"	C. Youngers	30 00
"	C. Youngers	20 00
"	C. Youngers	15 00
"	J. R. Rose	75 00
"	S. Daniels	30 00
"	J. R. Rose	25 00
"	J. R. Rose	15 00
"	S. Daniels	50 00
"	J. R. Rose	40 00

Date.	On what account.	Amount.
September 19...	S. Daniels	$30 00
"	S. Daniels	20 00
"	S. Daniels	75 00
"	S. Daniels	50 00
"	S. Daniels	20 00
"	E. Comstock	20 00
"	P. Burnes	15 00
"	G. N. Sweezy	10 00
"	J. D. Patterson	30 00
"	E. Comstock	20 00
"	Clark & Cox	15 00
"	G. N. Sweezy	10 00
"	C. Youngers	75 00
"	P. Burnes	20 00
"	C. Green	10 00
"	A. T. Nordyke	15 00
"	P. Burnes	15 00
"	P. Burnes	10 00
"	C. Green	20 00
"	Peter Burnes	5 00
"	Peter Burnes	5 00
"	C. Green	5 00
"	Peter Burnes	6 00
"	Peter Burnes	5 00
"	T. McConnell	30 00
"	T. McConnell	20 00
"	T. McConnell	20 00
"	Ellen McConnell	20 00
"	T. McConnell	20 00
"	J. H. Glide	20 00
"	A. S. McWilliams	20 00
"	A. S. McWilliams	20 00
"	Ellen McConnell	20 00
"	T. McConnell	15 00
"	Ellen McConnell	15 00
"	W. M. Landrum	30 00
"	W. T. Wilson	20 00
"	W. M. Landrum	20 00
"	Tom Butterfield & Son	20 00
"	P. Saxe & Son	20 00
"	W. T. Wilson	20 00
"	T. Butterfield & Son	15 00
"	H. A. Rawson	20 00
"	W. M. Landrum	20 00
"	W. T. Wilson	15 00
"	W. T. Wilson	15 00
"	P. Saxe & Son	10 00
"	T. Butterfield & Son	40 00
"	Gray & Gilmore	45 00
September	Paid purses at Park	10,000 00

Date.	On what account.	Amount.
September	Donation to George Houston.....	$100 00
November 8.....	Hiram Cook, premium.....	30 00
"	Mrs. J. Devine, premium, 1869.....	10 00
November 9.....	David Bush, premium.....	10 00
"	Lewis Deitz, premium.....	20 00
November 11...	Mrs. W. C. Barrett, premium.....	5 00
November 15...	P. A. Espina, premium.....	5 00
November 16...	F. Klotz, wood.....	10 00
November 17...	Mrs. M. Oatis, premium.....	10 00
November 18...	Larkins & Co., premium.....	15 00
"	Fred S. Butler, lettering diplomas.....	26 75
November 19...	Jerry Woods, police.....	18 00
November 25...	B. N. Bugbey, premium.....	40 00
November 28...	Yount & Fletcher, painting.....	38 00
"	Robert Beck, salary for November.....	150 00
December 1.....	Matteson & Williamson, premium.....	75 00
"	Robert Allen, bill of work.....	411 00
December 3.....	J. C. Carroll & Co., feed bill.....	48 00
December 6.....	C. T. Wheeler, one share Union Park stock...	100 00
"	Chris. Green, two shares Union Park stock...	200 00
"	P. Morrill, one share Union Park stock.....	100 00
"	J. M. Frey, one share Union Park stock.....	100 00
"	George Rowland, one share Union Park stock	100 00
"	F. M. Chapman, four shares Union Park stock	400 00
"	H. M. Bernard, one share Union Park stock..	100 00
December 7.....	John T. Carey, one share Union Park stock...	100 00
"	Robert Allen, one share Union Park stock...	100 00
"	F. S. Malone, one share Union Park stock....	100 00
"	C. G. Carpenter, premium.....	5 00
December 8.....	E. M. Skaggs, three shares Union Park stock	300 00
"	E. M. Skaggs, premium.....	40 00
"	W. P. Coleman, one share Union Park stock...	100 00
"	Robert Beck, one share Union Park stock.....	100 00
"	Hess & Clark, one share Union Park stock...	100 00
December 11...	John N. Andrews, engraving.....	79 88
"	H. Wachhorst, silverware.....	262 30
"	Whittier & Fuller's bill.....	26 00
"	N. Clark & Co., premium.....	10 00
"	James Farris, one share Union Park stock....	100 00
December 12...	C. G. Carpenter, premium.....	30 00
December 14...	Overpaid premium at Park.....	10 00
"	J. F. Harrison, premium.....	5 00
"	M. Willis, music.....	700 00
"	Tyree's entrance fee returned.....	50 00
"	J. D. Lord, one share Union Park stock.....	100 00
"	E. Mills, fourteen shares Union Park stock...	1,400 00
December 15...	J. Whitcomb, one share Union Park stock...	100 00
December 19...	George H. Baker, diploma.....	14 00
December 20...	Mrs. E. F. Aiken, premium.....	48 00
"	E. F. Aiken, premium.....	5 00

Date.	On what account.	Amount.
December 20...	P. A. Espina, filling diplomas	$60 00
"	J. W. Coleman, one share Union Park stock	100 00
December 22...	E. G. Jefferis, bill printing	73 50
"	Colusa Flour Mills, premium for 1868	15 00
"	I. L. Merrill, use of crockery	30 00
December 23...	J. A. Mason, one share Union Park stock	100 00
"	California Silk Manufacturing Co., premium	50 00
"	N. L. Drew, one share Union Park stock	100 00
December 24...	D. E. Callahan, one share Union Park stock	100 00
December 27....	B. R. Crocker, one share Union Park stock	100 00
"	Estate of John Arnold, one share Union Park stock	100 00
"	Estate of C. A. Peake, one share Union Park stock	100 00
December 28....	Robert Beck, salary, December	150 00
"	R. C. Terry, premium	25 00
"	F. M. Chapman, blanket	12 00
December 29....	William Johnson, premium	8 00
1871.		
January 3.....	Edwards & Co., stationery	58 50
"	L. Goss, one share Union Park stock	100 00
"	I. Lohman, one share Union Park stock	100 00
"	H. S. Beals, one share Union Park stock	100 00
"	G. G. Morgan, one share Union Park stock	100 00
"	D. W. Earl, two shares Union Park stock	200 00
"	T. M. Lindley, one share Union Park stock	100 00
January 4.....	John Gillig, one share Union Park stock	100 00
January 5.....	Samuel Jelly, silverware	89 50
January 9.....	*Daily Record*, printing	7 00
January 12.....	J. Banquier, three shares Union Park stock	300 00
January 13.....	Edgerton & Smith, drawing lease	10 00
January 14.....	*Sacramento Reporter*, printing	12 50
January 16.....	John Klotz, wood	8 25
"	Justin Gates & Bros., bill	18 25
"	J. N. Andrews, engraving	6 85
"	H. S. Crocker & Co., bill	15 50
January 19.....	J. P. Robinson, one share Union Park stock	100 00
January 20.....	Summit Ice Company	21 74
January 23.....	Robert Beck	19 50
January 27.....	Robert Beck, salary, January	150 00
	Total	$40,028 68

GENERAL BUSINESS OF THE MEETING.

While the committee were engaged in examining the financial statement, the President announced that the next business in order was the election of officers.

I. Lohman moved that the Secretary be instructed to cast the vote of the Society for Charles F. Reed, present incumbent.

Mr. Reed stated that it was not his desire to be reëlected; that the duties of the position were arduous and required much valuable time in their discharge. But he could not fail to discover a somewhat general desire to have him remain as President of the Society, and at the earnest solicitation of his friends he would consent to act, provided the Society saw fit to reëlect him. There being no other nomination, the motion was put and carried unanimously.

Mr. Reed thanked the members for the honor they had thus conferred upon him, and said that his past record as presiding officer of the California State Agricultural Society must be their guarantee that his course in the future would be marked by efforts to advance, by every means in his power, the influence of the Society and the agricultural interests which it represents.

It was then announced by the Chairman that three Directors were to be elected for a term of three years, to fill vacancies caused by the expiration of the terms of R. S. Carey, H. M. Larue, and H. R. Covey.

W. F. Knox and Charles E. Greene were appointed Tellers.

The following named persons were placed in nomination:

R. S. Carey, H. M. Larue, H. R. Covey, H. M. Bernard, Colonel Younger, of Santa Clara, and J. R. Nickerson, of Placer. Several others were also named, but they withdrew.

First Ballot.

Whole number of votes cast	79
Necessary to a choice	40
Carey received	66
Covey received	61
Younger received	36
Nickerson received	23
Larue received	20
Bernard received	14

The Chair announced that Carey and Covey, having received the requisite number of votes, were reëlected as Directors for the ensuing term of three years.

Second Ballot.

Whole number of votes cast	65
Necessary to a choice	33
Younger received	43
Nickerson received	10
Scattering	12

Larue and Bernard withdrew.

The Chair announced that Younger was elected to the Board of Directors.

The Finance Committee not having concluded their labors, it was moved that they report to the Board of Directors, which motion was carried without dissent.

On motion, the meeting adjourned *sine die.*

DIRECTORS' MEETING—NO QUORUM.

It was announced previous to adjournment that a meeting of the Directors would be held immediately afterward in the Secretary's office. It was found, however, on calling the roll, that no quorum was present, and the meeting was accordingly adjourned until the fifteenth day of February, at two o'clock P. M., at which time the date for holding the next State Fair will be decided upon.

REPORT OF THE FINANCE COMMITTEE AS MADE TO THE BOARD.

SACRAMENTO, January 27th, 1871.

President and Directors State Agricultural Society:

GENTLEMEN: We, the committee appointed to examine the report of the Treasurer of the State Agricultural Society, report that we have examined his books and vouchers, and find them correct.

E. M. FRY,
DAVID BUSH,
E. B. KENYON.

OPENING ADDRESS.

DELIVERED BEFORE THE STATE AGRICULTURAL SOCIETY ON THE FOURTEENTH DAY OF SEPTEMBER, EIGHTEEN HUNDRED AND SEVENTY.

By CHARLES F. REED, President.

Ladies and Gentlemen, and Members of the State Agricultural Society:

We have come together once more on this the day of California's industrial jubilee, to meet and greet each other with words of congratulation and good cheer. We have come once more from the valleys and mountains, from the cities and towns, to meet here as friends and coworkers in the great cause of social and industrial improvement. It has been my good fortune, on many occasions like the present, to address some of you in this same noble hall with words of salutation, and to extend to you, in behalf of the society, the hand of welcome and good fellowship. Permit me once more to repeat those salutations, and to congratulate you upon the favorable auspices under which California's Annual Fair for eighteen hundred and seventy is ushered in. Never before, since the organization of the society, has it been in so prosperous a condition as to-day.

Every dollar of indebtedness has been fully discharged, and the financial success of the society is placed beyond a peradventure. The number of active members is greater than at any former period, and the list is gradually increasing from year to year. The growing interest in the annual exhibitions of the society has rendered it necessary to build additional room for the accommodation of exhibitors at the Hall, and many improvements of a permanent character have also been made at the Park. Improvements by a State Agricultural Society like those we have this year been called upon to make are certainly indicative of the agricultural prosperity of the State, and when we reflect that our agriculture is but in its infancy, and that it has been built up upon the decline and decay of another once all-absorbing industry—mining—we may well be proud of its present prosperous and successful condition. But a few short years ago agriculture—legitimate, life-giving, nation-sustaining agriculture—was unknown in California.

Even California herself was to the balance of the world as a sealed book. Her mountainous regions as an unpenetrated wilderness—her broad plains as barren deserts—her bays, lakes, and rivers were unknown to commerce and their waters were undisturbed by man, except as the wild Indian's frail canoe, now and then, in silence lazily and aimlessly wafted its indolent owner upon their bosoms, not disturbing, but rather

forming a part of the universal solitude that then everywhere reigned. But a better and brighter day dawned. A few American citizens—some by accident and some moved by the true spirit of adventure—coming into and roaming over this country were enraptured with its majestic and beautiful scenery, and captivated by its salubrious and invigorating climate. Believing they had found the land of promise—the modern Eden—they settled in different localities and began in earnest to build them houses and raise them up households. Thus was planted here the seed of American enterprise and of American institutions.

These few pioneers knew not what they were doing; they knew not nor could they comprehend the great part they were acting in the important changes the country they had adopted was so soon to produce in the world. But with the certainty of fate, or destiny, or Providence—call it what you may—those changes came and came rapidly. They gave to the United States a territory equal to an Empire, a territory richer in precious metals than any other territory of equal extent the world had ever known, a territory which in the short space of twenty years has added to the wealth of the world—has increased the business capital of the nation over a thousand millions of dollars! This increased capital and wealth has given to mankind throughout the world new life, new energy, new enterprise, and new capacity for general business and improvement, both private and public. It has entered into and had its influence upon all the ramifications of society in all the civilized nations of the earth. It has opened the coffers of the rich, created new channels for labor, administered to the wants and increased comforts of the poor. It has projected and built thousands of miles of railroad and telegraph lines, both in the new and the old worlds. It has quickened international communications and increased international commerce by spanning the depths of the largest oceans with telegraphic cables and seaming the surface of the high seas with lines of magnificent ocean steamers. It has projected and consummated the two greatest enterprises ever undertaken by man by uniting the extremes of the western continent with an overland railroad, and those of the eastern by a steamship canal, thus creating two short competing routes for the travel and commerce around the world.

The admission of California in o the Union with her free Constitution and free territory was undoubtedly one of the principal initiative causes that brought about the Southern rebellion, and California gold in turn furnished the Government, in the hour of her peril, with much of the necessary means to crush the rebellion, and with it to banish from the earth American slavery—thus settling for all time to come the most troublesome question our fathers had to deal with in the organization of the Government and the most dangerous one that ever has threatened its continued prosperous existence. Viewed in this light, California furnishes a striking example of the powerful influence that a people intensely in earnest in the accomplishment only of their own purposes, and pursuit only of their own ends, may under Providence exert upon the destinies of the world.

Our State, as well as our people, is, in many respects, without a precedent or a parallel. She sprang at one bound from infancy to maturity. Without permission of the General Government, with no enabling Act, or territorial or other organization known to our laws, publishing to the world a Constitution expressive of the sentiments and will of her people, she knocked at the door of Congress for admission among the sisterhood of nations. After a short but desperate struggle, in which usage, pre-

cedents, and sectionalism were arrayed against necessity and our determined will, we triumphed, and but twenty short years ago the ninth of the present month we date the commencement of our existence as a State.

Well may the California pioneers who took part in the events of those times delight to keep green the memory of that day! Well may they celebrate the anniversary of that day with bonfires and illuminations, with patriotic poems and orations!—for to them the ninth of September stands next in importance to the fourth of July. Well may they be proud to number among their members some of the first men and most distinguished officers in the nation, and well may they feel complimented when some of those officers travel over three thousand miles to join them in their celebration.

But we have remarked that a few short years ago agriculture was unknown in California. At the time of her admission as a State no one was found so wild as to imagine that she had any other value than for her mines. To-day, how different her position as an industrial State! Our mines, though still valuable, are among the least of our industrial resources, and agriculture is the great all-sustaining, all-enriching, and all-important industry. From the least, we have, in the short space of twenty years, grown to be one of the most important agricultural States of the nation. In the production of fruits, wines, wool, and silk, we undoubtedly stand the first in the Union. Our fruit list already embraces almost every variety known to the world. The hardier kinds grow to perfection in all portions of the State, from the northern and more mountainous regions to the warm tropical climes of the southern valleys. In those valleys, and in almost all the valleys of the State protected from the direct ocean winds and the sweep of the winds of the broad plains, all the tropical and semi-tropical varieties flourish and come to a degree of perfection not excelled in any of the fruit-producing islands of the tropical oceans. The eagerness with which our neighbors of the Atlantic slope seek the California fruits shipped across the continent, shows the superiority of those fruits over those of their own growth. When we shall have greater facilities and more perfect arrangements for shipping those fruits, with cheaper freights, as we will have in a few years, here is an opening for a trade that is destined to bring back to California no small portion of the gold that in former days was shipped out at the Golden Gate in payment for these very articles imported.

In this connection allow me to remark that there is no longer any excuse for permitting fruits of any kind to go to waste for want of a profitable market. If they cannot be marketed green, let them be dried, and there is a demand in the Eastern States for all that can be thus preserved, at highly remunerative prices. The variableness of our climate in different localities, if we choose to avail ourselves of the advantages thus offered by nature, will enable us to enjoy the luxury of green fruits the year round. Thus the same varieties of apples that ripen in the early Fall in the valleys, when grown at an elevation of fifteen hundred feet up the Sierra Nevadas, do not ripen until midwinter, and if grown at from six hundred to one thousand feet greater altitude, will keep well until our markets are bountifully supplied with the early varieties of the following Spring. This is no wild statement founded upon mere theory or conjecture, but its truth has been thoroughly demonstrated by actual fact.

It is also ascertained that the fruit produced at a high altitude on the

mountains is much finer grained and better flavored than that grown in the valleys, and, if possible, the orchards are more prolific. These facts must prove of great value to California as a fruit growing State, and those orchardists who first take advantage of them in a practical way will be doubly rewarded for their enterprise.

Though our Fair comes at a time when all the earlier varieties of fruit are gone, and though the display is but meagre compared to what our fruit growers might and ought to have made it, yet we may without fear challenge any other country in the world to excel or equal it. A careful examination of the exhibition of fruit before us will fully prove the strict correctness of the statement we have made in regard to the climatic and other advantages possessed by California as a fruit growing country. Our wine product this year will probably exceed twenty million gallons. Our vineyards are steadily growing in numbers and capacity, and with the age of the vine the wines are steadily improving in quality. Those varieties of table grapes that will bear transportation are selling for home consumption and shipment East at highly remunerative prices, and California as a wine growing country is steadily making a good reputation for herself.

The greatest drawback to her complete success in this industry is the want of uniformity and system in the selection and assortment of the grapes and in the treatment of the wines. Thus, instead of producing a few choice and standard varieties of wines—such as would always be in demand at the highest rates the world over, we have been and are still pursuing the suicidal course of placing upon the markets wines of as many different shades of taste as there are different vineyards in the State.

Again, our wine dealers, in order to produce some degree of uniformity out of this great variety of wines, have taken up the practice of mixing and *doctoring* them so as to give the mixture some of the characteristics of the better brands, for which they pass them off. This is all wrong, and a great detriment to the character of the California wines generally, and especially so to the wines of the best makers. It is of the highest importance to our State, and to the wine makers themselves, that these evils should be corrected.

This object could be accomplished if capitalists and enterprising men would establish wine cellars in the different wine growing districts, and buying up the grapes from the producer, and assorting them with reference to their peculiar wine qualities, would submit them to such uniform treatment as science and good judgment might dictate. Capital could not find a better investment nor enterprise a more certain reward than is here offered. In the absence of such facilities the producers themselves would find it greatly to their advantage to associate together and manufacture all the wines of large districts at one common cellar and under one common management. We commend this subject to the serious consideration of our wine makers, and to men of capital and enterprise.

The magnificent exhibition of fruits, grapes, and wines from our mountain counties, the old mining districts, is worthy of more than a passing remark, and it warrants a more particular notice of some of the advantages of those districts.

Some of the best and most extensive and productive vineyards and orchards in the State are to be found in those localities. Without desiring to make any unpleasant distinctions, but only with a view of illustration, we would mention those of Nickerson, of Placer, Marshall, of

Nevada, Bugbey, of Sacramento, and Chalmers, Dickson, Brooks, Carpenter, Weatherwax, and others, of El Dorado. The establishments of each of these gentlemen, comprising as they do, extensive and highly cultivated and productive vineyards and orchards, together with commodious and well appointed wine cellars and other buildings, and all the paraphernalia of prosperous mountain farms, may well be pointed out as worthy of the pride of any State. They are really a credit to California, and each is to its enterprising proprietors a valuable fortune. Here and there, scattered through the foothills, are many other smaller but prosperous vineyards and orchards, but these are named as examples. And in this connection allow me to state a fact that is not generally realized even by those supposed to be well informed. There is on the western slope of the Sierra Nevadas, a strip of country about twenty miles wide by over one hundred long, in which there may be selected hundreds of thousands of farms, equally favorable as to location, soil, climate, and all the other natural requisites as are the farms above named. All that is wanted to make these new locations as prolific, as beautiful and valuable as those referred to, is the same amount of money, skill, and labor bestowed upon them that these men have bestowed upon their valuable homes. I will say further that a very large portion of all this land has been surveyed, and can be bought of the Government and the railroad company for from one dollar and a quarter to two dollars and a half per acre. Here are homes for the million, and those who under such circumstances remain long without homesteads are without excuse.

Our wool clip the last year was a little over fifteen million pounds, while this year it will exceed twenty million. Never before did our wool bear so good a reputation or bring so high a price in the markets as at present. By the cultivation of alfalfa or Chile clover upon our sheep ranges the number of sheep may be greatly increased on the same area of ground and the quantity enhanced and quality improved. Silk culture is being entered into in all parts of the State, and bids fair at no distant day to become one of our most important industries. It is estimated that there are now in this State two million five hundred thousand mulberry trees, and the number will be greatly augmented during the next Winter. During the past year a silk manufacturing company, with abundant capital, has been organized in San Francisco, and buildings for the factory are nearly completed. This will stimulate the industry by furnishing constant home market for the product, the want of which has been a serious drawback to it heretofore.

It would give me great pleasure to go through the list of our agricultural products and show the rapid increase in each from year to year, but space and time allowed in an opening address will not permit. The whole subject of agriculture will be so thoroughly discussed by the able speakers that are to address you from this stand during the week, that it seems unnecessary for me to claim your attention longer.

I feel called upon, however, briefly to refer to a subject which at the present time is of greater interest to California and all her producing and industrial classes than any other. It is an evil which more than all others discourages and defeats California energy and enterprise, and disheartens and opposes California industry and labor. I refer to the exorbitant and unwarranted demands of capitalists for the use of money.

In earlier days, when mining was the leading industry of the State and gold its only product and export—all the necessaries of life being imported—when men with pick, shovel, and rocker, could take from the

earth from ten to fifteen dollars a day each—when the merchant could realize from fifty to two hundred per cent profit every time he turned his capital over, and money was worth from sixty to one hundred per cent per annum, all seemed to go harmoniously on, for then we had no formidable competitor in our great and only staple export, and the favors of fortune were so fickle and uncertain that none of the rules that generally regulate the relations of capital, enterprise, and labor, seemed applicable to us.

Since that time changes have been gradually taking place in our whole industrial system and in our relations to and with the outer world. The product of the mines has been gradually falling off, and enterprise and labor have been seeking other channels of occupation. The facilities of travel and commerce and general intercommunication between our State and other countries have been gradually increasing, until with the completion of the overland railroad the revolution is thorough and complete. To-day our great staple products are those of agriculture and manufactures, and wherever, in whatever country, whether at home or abroad, on the eastern or western continent, those products seek a market, then they meet face to face and come in sharp competition with similar products from other portions of the world.

Our wheat has to compete with wheat from South America, the Atlantic States, Russia, the Mediterranean, and all other wheat growing countries. Our wines find competitors in the wines of Germany, France, Italy, Spain, and Portugal. Our wool comes in contact principally with the wools of the Eastern States, Europe, and Australia, while our silks have to make their way against the old silk growing countries of Southern Europe and Asia; and our manufactures have to combat the manufacturing capital, facilities, and skill of the Eastern States and England.

Thus, nothing we now produce, nothing we now manufacture, can find a market except against the ever present and ever pressing competition of the world.

What then, I ask, must be the necessary conditions of prosperity and success to our agriculture, our manufactures, and our commerce?

Our natural advantages for these great industries are not excelled by any other country in the world. We have a soil and climate unsurpassed, our manufacturing facilities are equal to those of any other country, and our location is in the direct path of the commerce of the world. The skill and energy of our people is proverbial. Then what more do we want to prosper, to excel? My answer is: cheap capital and cheap labor.

Give us the former and the latter will follow, for whenever there is energy and enterprise in a country, and plenty of money at low rates of interest, then all the necessary expenses of living will be cheap, and labor will find constant employment and will be readily and cheaply obtained. Capital in all ages and in all countries is proverbially timid and slow to move, and in this State it seems willfully and stupidly blind to the changes and improvements that a few years have brought about. What reason or sense is there that enterprise and industry in California should be taxed for the use of capital from twelve to eighteen per cent, while the same capital in Europe and the Atlantic States or any other portion of the world cannot command but from three to six per cent with the same classes of security? None whatever. And yet such is the stubborn fact. And in this fact, above all others, lies the greatest impediment to California's rapid settlement—to the development of her

boundless resources, and to her upward and onward march to permanent and substantial success and universal prosperity.

Ladies and gentlemen, permit me to say to you who have not yet visited the Park that the exhibition of fine stock of all kinds has never been equaled in California, if in any other State. The exhibition here in this hall is before you. It speaks for itself. With one third additional space to our old building we have all full, and it would do credit to any country. It gives me great pleasure again to congratulate you upon the favorable auspiees under which the Fair for eighteen hundred and seventy is ushered in. I bid you welcome to all its enjoyments and to all its sources of study and improvement.

ANNUAL ADDRESS.

DELIVERED BEFORE THE STATE AGRICULTURAL SOCIETY, SEPTEMBER SIXTEENTH, EIGHTEEN HUNDRED AND SEVENTY.

By Hon. A. A. SARGENT.

Mr. President, Ladies and Gentlemen:

I congratulate you upon this annual gathering, this magnificent display, these evidences of prosperity of your society and of the State. No one who has lived in California for years past, with but brief periods of absence, can appreciate the effect produced upon the eastern visitor or upon the Californian who has passed a year or more away, by first impressions, or fresh ones, of our State. Whatever is lovely in climate, magnificent in scenery, beautiful in flower, or exuberant in fruit, however familiar to the constant resident, to the visitor or returned wanderer is novel and enchanting. A few weeks ago I passed through nearly every State of the Atlantic seaboard, and thence westwardly from ocean to ocean. Through all the region which I traversed there was dust and drought, cloudless skies and suffering earth. East of the Sierras the crops were burnt up, the grass wilted by the wayside, and men looked up to the unpitying heavens and longed for the rains so untimely withheld. It may be that such a spectacle prepares for a more full appreciation of the advantages and excellences of this State. The traveler arriving here finds first the evergreens of the Sierra crowning with life the granite peaks and doubly refreshing after the wide spaces he has traversed of sage and desert. In these broad valleys in midsummer he finds the dust and drought that accompanied a blasted harvest in the east, but not here the sign of destruction. The golden harvest is gathered in, and the luscious fruits of Autumn astonish by their profusion and perfection. He left sultry days, where exposure to the sun might bring paralyzed imbecility or swift death, succeeded by steamy nights in which unrest turns heavily after the labors of the day, and gains no refreshment. Here he finds certainly an ardent mid-day sun that may kiss eagerly but not treacherously, and refreshing nights that repair the toils of the day by sweetest sleep. If he is an agriculturist he hears with astonishment of the yield per acre of cereals—stories that revive traditions of the Genessee, but are nowhere now paralleled. He may hear of partial failure of crops, but so broad is the State that universal failure never occurs. From foothill to valley, wherever he looks, he

finds the bounties of nature prodigally displayed, as if this far west bordering the sea had been chosen out as the favored of Providence for the sunniest blessings and happiest destiny.

Compared with many of the Territories that have grown into noble States, and still keep steadily on in growth and influence, California, in location, climate, productiveness, in all natural advantages, is far superior. Yet in population we are nearly stationary. Bleak Minnesota outstrips us day by day. Iowa has five times our population. Our census to-day will not reveal over six hundred thousand souls in the State. It would have shown nearly that number in eighteen hundred and sixty if it had been carefully taken. I fear the present census does not do us justice; but it approximates closer to accuracy than that of eighteen hundred and sixty. Why are we not sharing more largely in the fertilizing tides of European immigration? Why do not colonies of thrifty Germans and Swedes nestle in our valleys, or develop the large capacity of our foothills for the vine, for silk, and wool? The mountain valleys and all the lands on and near the Coast Range are admirably adapted to grazing. Yet, so inadequate was our dairy farming last year that we imported from the East one million dollars worth of butter. Chicago sent to us eggs. New York and Oregon sent dried fruit, though millions of pounds of finer fruit than New York can produce under glass rotted under our trees. With the Muscat of Alexandria grapes in abundance, we now import raisins. We make good candles, but we buy more, as well as soap, and even cranberries. Oregon sugar-cures hams for us. The East furnishes us with much of our furniture. I need not add to such a list. The showing is better than formerly; but we do not yet improve our opportunities. For all these articles, as well as in stock and sheep raising, in special industries, as silk culture and beet sugar production, California should be unrivaled. With such advantages our State scarcely increases with the years. The railroad spans the continent, competing with the steamers in furnishing cheap transportation to immigrants, yet the State gains little in population, while its business men lose by competition with more frugal dealers to the eastward. Yonder plains should be covered with flocks of the choicest sheep, and our hills with the finest cattle. Our wool clip should supply the world even more certainly than our wheat. Yet what aid has legislation ever given to this end, or is even afforded by enlightened societies like this. Compare the speed programmes of agricultural fairs with the premiums for choice cashmere goats or Ayrshire or Alderney calves! We must know our faults as a community in order to correct them. There must be some cause for this tardiness of movement of population hitherward, which these industrial societies must discover and endeavor to correct, or we shall find ourselves left far in the distance by our sister communities. We certainly are not satisfied to wait until all the more eastern States have become full hives to swarm upon us. Several generations will elapse before that can take place. With superior attractions we should take the lead of them, and make the Pacific coast an empire of wealth and power.

As I am not a practical agriculturist, you will not expect a dissertation on modes of improving stock, on fertilizers, or agricultural chemistry. But a few observations may be acceptable upon the question so interesting to every farmer and to every business man of the State: Why does not California, with all its attractiveness and productiveness, grow more rapidly in population and development?

The first, and to my mind the strongest reason, is the difficulty of

acquiring lands cheaply in this State. Years ago, before Americans possessed this El Dorado, the Spaniard obtained grants of all the lands fanned by the sea breezes, where, the lord of vast tracts, he lived lazily, surrounded by herds and dependents. When his possessions were afterwards confirmed to him or to speculators who fleeced him, these great grants remained, and many remain, in very few hands, held at large rates per acre, and forbidding close settlement and improvement. To supplement this system came fraudulent land grants, absorbing whole counties, and often confirmed. California would be millions of dollars richer to-day had not the Mexican system of colonization been practiced in it, provided the valleys and hillsides subjected to Mexican grants had not been open to the second curse of our land system—that of private entry. By this latter device millions of acres of public lands, such lands as in Iowa and Minnesota sustain hundreds of thousands of farmers, became the property of a few holders. I do not cavil at the speculators who took advantage of ill-judged laws to add mile on mile to individual possessions, and who now hold their cheaply acquired counties at high prices per acre. I only lament the system that gave the opening for such speculation, and try to suggest a remedy. In some of the valleys of this State a rider with fleet horses may ride all day on one man's land, acquired for scrip or greenbacks at depreciated rates. Not a fence or plowed field will interrupt that race against time. All is virgin, but desolate. From neighboring mountains a copious crystal stream rushes down, that could be carried over all these broad tracts, and redeem to fertility the barren square miles lying useless in the sun. But no industry is at work. The speculator awaits a rise. He does not improve, he speculates. To a settler the sight might not be forbidding could he purchase at near the price that the government fixes for its lands. But he turns away where fifteen or twenty dollars per acre are charged and goes back to bleak Minnesota, where the Winters may be cold, but land is cheap. Agents looking for land for colonies are thus repelled. Is it any wonder that our State does not increase in population?

This absorption of vast tracts of valuable lands in a few hands is contrary to the spirit of our land laws and the genius of our institutions. It is effected under color of a law that offers to any purchaser the chance to buy waste lands which, after reasonable opportunity for preemption and offer at public auction, are not taken. But the laws design that settlers shall have ample opportunity first, and that lands shall not go to private entry until the country is developed about them and they are still refused. This was the principle of the great preëmption Act of September, eighteen hundred and forty-one, which has disseminated blessings throughout the country. Our legislators at that period were actuated by a noble spirit of liberality both to aliens and natives, not forgetting the rights of women. That Act has done more toward the promotion of settlements in the vast regions of the northwest, and in the development of their agricultural resources and interests, than all other causes combined. Thousands and thousands of indigent families have been enabled under it to obtain comfortable homes, and by means of these settlements our western wilds have been subdued into civilization and covered by the farms of a prosperous and happy people. But in most of the fertile valleys of this State we have been totally deprived of its benefits by a hasty system of surveys and offering of land. These lands are as effectually locked up to the indigent emigrant as are the deer parks and rabbit pastures of the English lord.

One remedy for this condition of things is partial, but less satisfactory

the longer delayed. Congress should pass a law dedicating all the remaining lands of California to homestead and preëmption entry only. This would save all lands not yet absorbed, and prevent the future offering of lands. But the effective remedy is in the hands of the Legislature, and I suggest it with deference. A heavy land tax, rigidly enforced, would make unimproved lands held for speculation cheaper, and tend to break up the great tracts that now exclude settlement. This is not agrarian or unjust. The theory of all property taxes is that they are assessed upon the actual value of the property. If the landholder will not sell his unimproved lands for less than a certain price per acre, that price should be assessed as the value of the land. The remedy is gentle; the evil to be corrected is enormous. What greater curse can the State suffer than to have diverted from it the tides of population that would make its valleys rejoice and its waste places to blossom as the rose? No one can doubt that our population to-day would reach one million if every foot of land in the State at its birth had been Government land, and sold to actual settlers only at one dollar and twenty-five cents per acre.

Such Congressional legislation as I have suggested has already been adopted by the House of Representatives; and a bill became a law at the session just closed, which provides that lands subject to private entry, withdrawn for railroad purposes and subsequently restored, shall not by such restoration become again subject to private entry, but shall be open to homestead and preëmption only.

The importance of these considerations to the prosperity of the State will be seen by one simple statement: out of about twenty millions acres of public lands disposed of in this State, exclusive of grants in aid of railroads, only a little over two millions have been sold to actual settlers or conferred on them under the Homestead Act. Scarcely more than a tenth of the lands patented by the Government within our borders during the twenty years of our State existence has gone to actual settlers. Nine tenths are held by large owners or have been peddled out at ruinous prices to those who would buy. Am I not right, then, in saying that a principal reason for the slow growth in our population is the difficulty of obtaining cheap lands in this State?

There are other difficulties in our anomalous land system which this may not be the place to dwell upon. The Sierras behind you are feathered with magnificent pines and oaks. From them largely you draw the lumber for your fences, for your dwellings, perhaps the fuel that warms you in Winter. Yet not a tree can be lawfully cut down on Government lands, and there is no way in which the title can be obtained to the lands from the Government. In those frosty altitudes settlement and preëmption are impossible. The great industries pursued there, resembling those of the piney woods of Maine, should be legalized by legislation, and some cheap method devised by which title to the lands may be obtained. The miner, working by the side of the lumberman, has now an opportunity to make his claim his home, and will I trust cease to be nomadic and become settled and contented, adding to the stability and prosperity of the State.

While much may be achieved by legislation in repairing the errors of the past, and laying the foundation of a future prosperity, there are errors of practice of the present beyond its reach. Our business men are learning a rude lesson from the new contact with eastern competition. They are discovering the necessity of economy and retrenchment. Have not our farmers that lesson to learn also? Have they not

more to learn, viz: that a farming community does not do wisely that seeks chances of sudden wealth by over production of some one article instead of diversifying its products and relying on smaller gains? I have called attention to the fact that one million dollars worth of butter per year is imported into this State. Where are our dairy farmers? Are they not all wearing out their lands to raise wheat to come in competition with all their neighbors, and make or lose as a bad or good crop in Europe opens a foreign market? Our broad acres sheared by machinery tempt to large farms and the cultivation of cereals. Would it not be better to reduce the size of many farms and diversify the productions? There is no reason why home-made butter should not expel every pound of the imported article. Here you need not feed or shelter your stock during Winter even. In the other States the stock must be fed and sheltered nearly half the year. The cost of production should be so much less here that California should ship its butter and cheese successfully by the railroad or Isthmus instead of importing it. But this may not be hoped while our farmers see wealth only in wheat, and neglect the diversified interests that make up agricultural industry elsewhere.

The most vigorous protests have been entered of late by agricultural authorities against the extensive and exhausting production of wheat that characterizes California and some of the Western States. We are assured that our soil is being rapidly and hopelessly exhausted. The elements that go to make this cereal are the most precious constituents of our soil. To raise twenty-five bushels of wheat on an acre strains the capacity of that acre, and renders it less able to produce unless recruited with appropriate plant food. Our rich new land—rich in lime and potassa, in the nitrates and phosphates—produces more abundantly, but every crop weakens the soil. For a few years the strong inducements to sow a great breath of the productive soil, aided by implements of modern agriculture, may make the farmer overlook the consequences. But he is only eating out his fresh and fertile soil, and wasting the heritage of his children. The riches of our lands are drained to pour their affluence into the sewers of London and Paris. Were I a practical farmer I would press these facts and considerations with all my force upon your attention. As it is, I point to your best authorities who deprecate the enormous, unvarying production of wheat, and prophesy barrenness and desolation as a consequence. Is this the practical answer, "If so it is, we will get rich in the process—'after us the deluge?'" The answer might have been characteristic of California in the past; but now let us believe it has higher aims and principles.

Another drawback to our State is not the peculiar fault of our farmers—it pervades all classes. It is that extravagance of life and ideas, born of the flush days of the State, when the gold glittered among the grass roots and wealth came and vanished like a dream. It is amusingly illustrated by the affected reluctance of some Californians when first visiting the East to take small change, as unworthy their attention—an affectation that only makes them ridiculous. It is also illustrated by the exuberant, undiscriminating hospitality extended at first to all comers here from the East, and often bestowed upon mercenary adventurers or unappreciative selfishness. The frank openheartedness of Californians was abused and frequently rewarded with sneers. An instance occurs to me of a person who was feted about this State and Nevada, and treated with the utmost consideration and kindness, although he had no claim to such attentions except as one of a party of early visitors.

He paid his debt by denouncing his generous entertainers in a public speech as galloping to bankruptcy from their extravagance, and as having only selfish ends in view in their lavish hospitality. He is a type merely of his class, and we have been privileged to receive and worthily entertain many nobler men. We have now as our guest a Californian by association, one of the energetic founders of our State, illustrious for brilliant achievements in the field, one of the great Generals of the world, whose fame the future will never allow to die. To such, and to the great statesmen of our country of any party tempted to visit us by the completed road, our welcome may well be warm and appreciative. But the fault of our unusual and overflowing generosity is that it is to too great an extent undiscriminating, and is one of the evidences of a luxurious extravagance that new business competitions must correct, or we shall justify the prognostications of some of our guests and reach the bankruptcy they predicted. This extravagance, of which the illustrations given are mere casual evidences, leads us as individuals and communities to live up to or beyond our means, so that no fund is prepared for the future and wealth does not accumulate. A single bad year, causing a complete failure of his crops, is apt to plunge a farmer into distress, if not absolute bankruptcy. Under the influence of the prevailing habits the farmer is not satisfied with a living and slowly coming wealth, with a small farm; he must add field to field and cultivate a great space, often beyond his capital, and where failure is disastrous. Under their influence all classes rush into speculation and deal in articles and business of the most opposite character. A dry goods dealer speculates in wheat, a farmer in mines, a miner in fast horses. Each to his trade, moderately prosecuted, would gain a livelihood that would be considered prosperous in other States. Here he fails in all because he expands beyond his means and experience, deprives business of his legitimate exertions, and depresses the State by his failures.

Another cause for the slow growth of this State is the anomalous condition of its labor market. While wages are nominally higher here than anywhere else perhaps in the world, and it would seem that laborers, skilled and unskilled, would pour in here in vast numbers and set in motion every wheel of industry and develop every latent resource, in fact the influx of laboring men is very limited and the encouragement offered for their presence is very slight. It is not because we have not vast fields yet unshorn, fair as the sun looks upon; not because there are not a hundred branches of manufacturing and mechanical industry that need to be established or extended; not because remunerative mines for moderate expectations are not to be found. The State needs labor; is able to reward it; why does it not come hither? It is in a measure because the wages of labor here are only nominally higher than elsewhere. In reality they are lower. While the artisan or laborer is employed he obtains a high price for his labor. But if the weeks and months of idleness are counted, he gains less than his brother in the East. The rate of payment for the time employed is jealously insisted on, while the loss by want of occupation is overlooked. As many enterprises that would give steady employment to thousands fail or are not commenced under the present system, the artisan may ask himself if there is not some radical error in the dealings of labor and capital within his power to correct. To repair or build a ship in San Francisco costs at least twenty-five per cent more than in New York, while the cost of living on this coast is now cheaper. Is it strange that our shipwrights are unemployed, when all the commerce of the Pacific might be

tributary to them? If it is confessed that there is a general aim of workmen to do the least work for the most money, the reason is given why enterprise languishes and capital is dormant or removed from the State. Adopt this principle and Chicago will do our casting, New York build our ships, and repair them where possible, the East supply our manufactures, and the world combine against our prosperity. It is natural that there should be the same unwillingness on the part of labor to adapt itself to the new order of things as that which distinguishes employers. It is the necessary outgrowth of our isolated and prosperous past. There is need for all classes to recognize the inevitable, and bring alike their expenditures and their expectations down to the present capacity of the State. Outside pressure and home distress will force us to this in spite of ourselves if we do not divert the necessity; while there is an alternative of a better and more durable prosperity if we heed the obvious lessons of the present.

Many have seen a solution of the labor question in the employment of Chinese, who furnish a fair article of labor, skilled and unskilled, at which white men cannot subsist. This may be a temporary relief to capital, and may forward enterprises that else would halt indefinitely. But I am not able to concur in the opinion that the immigration in large numbers of this people is desirable. A slower growth of a community, with the elements in it only of Christian civilization, seems to me far preferable to rapid development by an alien, heathen population. Would not twenty-five stalwart German or Scandinavian emigrants, with their families, be better for the real interests of the State than the whole Chinese population of I street? If the object of society is merely to accumulate wealth in the hands of an upper class, and have the laborer the mudsill—if American civilization and republican institutions could coexist with such a theory and practice—then it might be well to crowd every avenue of labor with Asiatics, and rejoice in the cultivation of the last inch of soil, the working of the deepest mine, the guidance of every wheel of industry by the adroit Chinese to the exclusion of white labor. But while white laborers need employment, as they always will, while their families must live and their children be educated, while Europe offers to us every year hundreds of thousands of emigrants of cognate languages, religion, civilization, and hopes, it may be well to husband our undeveloped resources for the profitable employment of the future rather than exhaust them beyond the needs of the present. The census now being taken will show some remarkable facts in the movements of populations. The crowded Atlantic States have sent out their enterprising young men and women to the West in great numbers, while Europe has furnished its best populations to create new homes there. The national development during the past ten years has been enormous. Here, we have been stationary, our population probably diminishing, unless the decrease has been supplied by Chinese importations. Not so the West. A population easily resolving itself into the mass of American society, readily acquiring our language, honoring our institutions, worshiping our God, unexcelled in industry and skill, has spread like a flood over the broad Western prairies, fertilizing like the swellings of the sacred river. Cities have sprung up all over the land, tied together in every direction by lines of busy railways. There has been haste of development it is true. The stumps of the original forest are seen in the streets; the prairie mud is innocent of macadam. But there is life, and labor, and sure advancement, and contentment. There is the life and beauty of Christian civilization. The school house and the church nestle

among the cottages, or rise in grander proportions in the cities. Is not this development, which is natural in its order, and without limit of duration or capacity as long as this land is freer than Europe, and has that which Europe lacks, undeveloped resources open to the enterprise of the laborer, and lands untilled, asking him to accept them as a home; is not such sure and essentially American development better than that which could possibly be obtained by transporting the Asiatic on any terms to occupy those fields and exclude their prospective possessors? Take Iowa, a new and thriving Western State, built up by the means which I have indicated. Would it not be undesirable to see its population retrograde to the level of Chinese, however industrious the latter may be? I need not fill up such a picture; much beside industry is needed to make a desirable community in this land. Yet there is no practical difference in the result between the recession of an American community back to the level of Chinese and the displacing or anticipation of such a community by Chinese. In a few words, the growth of American and the influx of European population is developing our resources healthily and rapidly; and it is better for us and our posterity that these causes which have made us a great nation should have unimpeded sway.

But these considerations give no warrant for the appeals of shallow or artful demagogues, who would stir up the reckless or ignorant to murder or expel the Chinese, or make their presence here the theme of partisan declamation. I have no fear that the Chinese will greatly increase in numbers here or in the other States if stringent laws against the importation of coolies are passed. No political party desires to encourage their presence; no political economist would deny that the population of this country by races kindred to our own is to be desired in preference to it by those which are so incapable of assimilation. The remedy for whatever evils their presence entails will be found when the question is not made the hobby of party, but is dispassionately considered; and that remedy will not be found by erecting a Chinese wall around ourselves, not by suspending trade and treaties with China and Japan, and not in the torch, the bludgeon, or the pistol of the bully and assassin. I believe that the remedy for the presence itself of the Chinese is largely in the hands of these whose only resource is their labor; and that they should learn that excessive wages for little work prevents the employment of capital, and with it the employment of labor; or else drives the former, even against its will, to resort to any cheaper labor that offers.

While these are truths for the laborer to estimate, there are others for the capitalist as imperative. The safety and well being of society depends on the intelligence and comfort of the laboring classes. A rate of wages that starves the artisan's family, or prevents the education of his children, and does not enable the industrious worker to lay by of his savings for sickness or old age, is un-American, degrading and intolerable. Our institutions can only be perpetuated by the continued intelligence of all voters. The most numerous class of society will always be those who furnish the skill or muscle for the many revolving industries of civilization. They are the workers, and by their numbers, under our form of government, they are the ones who choose rulers and determine the destiny of the Republic. They cannot fulfill the duties of citizenship on the wages of peons or coolies. Their relation to the State demand of them education and virtue, which are only to be expected of those who have the means furnished by a fair share of the profits of

capital in exchange for their labor and skill to bring education, comfort, and advancement within their reach. This has been the American theory. Under it the industrial classes have developed men of inventive genius, ranking among the most eminent of the industrial benefactors of mankind, and furnished constant improvements in every branch of mechanics. It has fostered independence of labor; it has prevented class distinctions; it has made ambition and elevation the right of every one; it has been the parent of virtue, intelligence, and patriotism; it cannot be superseded and this country remain a Republic, where rights and benefits are reciprocal.

I am not of those who believe that the stagnation of business here has been caused by our use of a metallic currency. Were it so business should have revived rapidly as gold and greenbacks came to equality in value. We have escaped the fluctuations that alternately excited and depressed business in the East, and changed values so rapidly that no fortune was stable. Except so far as our gold may have been shipped to speculate in the gambling operations of the New York money markets, we have been saved from the losses entailed by a depreciating currency, inevitably followed at last by depreciating property. But the speculations of the gold room have not been more excited and unreasoning than many of those which for years have captivated our people, and drained us dry of our wealth. This State seems to have overlooked the necessity of developing its own imperial mineral resources to invest millions in every distant bubble that folly or fraud flashed before the public eye. What untold wealth our people have buried in Mexico! How many productive mines would have been opened at home; how many farms made fertile out of waste lands, with the labor and cost of Fraser River! With recent White Pine it is too soon to say that our people have learned to resist such excitements; but it is indisputable that the legitimate business of the State will languish, and its growth in wealth and population be retarded until such unhealthy excitements lose their power over our people.

There are causes beyond our control which have injured the growth of our State. Surface mines that yielded largely are worked out. Partial droughts have injured our harvests. We have helped to populate neighboring States and Territories. But the causes I have named are the results of our own improvidence, recklessness, and cupidity. We may make the next decade tell a different story, or we may still lag behind our younger sisters in the Union in growth and prosperity.

It is gratifying to know that our great resources are unimpaired, that our land is fertile as Eden, our opportunities unexcelled. We have at our feet all the elements of a grand empire. We have but to build with the materials shaped to our hands. Our climate and soil are varied infinitely, and produce in perfection whatever elsewhere is a specialty. Need I so say with this display around us? Here is the lavish abundance of cultivated nature—the fruits and flowers of this productive soil and genial clime. Our State will produce cereals and vegetables of every kind, fruit of every variety including those of the tropics—the orange as well as the apple; the date and fig as well as plum and peach; the grape for raisins and wine; the mulberry for silks; even the tea and coffee that we use; the finest wool in the world; coal, and granite, and timber; horses, and sheep, and cattle in perfection; and all this makes the future of the State to the agriculturist full of encouragement. Here is but the

dawn of a golden future, where true prosperity will be founded on the sure basis of exhaustless agricultural resources, by patient, intelligent industry. But each decade shows that in the United States, notwithstanding the abundance and cheapness of virgin soil, the advantages of climate, the increased facilities for transportation to available markets, and the independent condition of our farmers and planters, that the ratio of increase of agricultural products of the United States is in general far below that of the increment of population, accession of territory, extension of commerce, manufactures, internal improvements, and the modern appliances for economizing labor. The first employment of man in a new State is the cultivation of the soil, save in exceptional cases. As population multiplies, industries become diversified. Providence so orders it, that the cultivation of a small part comparatively of the earth's surface will sustain its inhabitants, and so gives opportunity for the multiplied employments that characterize civilization. Hence, as communities increase in density and prosperity, numbers resort to the arts, to manufactures, to mining, and other useful pursuits. As these industries multiply, the demand for the produce of the earth annually increases; and to meet this demand a corresponding tillage and application of labor to the soil, guided by science, intelligence, and modern improvement, necessarily follows. Therefore, while agriculture is the basis of all prosperity of the State, it is itself dependent for its highest prosperity on the development of other interests to furnish profitable markets. In this view it is a matter of congratulation that the manufacturing interests of this State have vindicated their ability to live and compete with their foreign rivals, and that some of them have even commenced to make their way in eastern markets. Our woolen mills, our great boot and shoe factories, our sugar refining, our manufactures of wooden ware, cordage, leather, carriages, iron, etc., are all tributary to the agricultural interest, in the most profitable form. The resources of the State in this direction are beyond estimate, with all Asia and Central and South America for a market.

Our mines of precious metals, especially heavy placer washings, are little understood and appreciated as a source of permanent wealth. The light placers have been exhausted. They gave sudden wealth to a fleeting population, which had not the skill or energy to discover or work the great gravel deposits laid ages ago in the deep beds of ancient streams, and which are now hidden by later-formed hills and cut through by more recent streams. Hundreds of feet below the roots of hoary trees the gold store reposes, requiring patience and energy to find and develop it. But it is the result of my observation in the mines that the great placer deposits of this State are scarcely scratched after twenty years of mining, and will not be worked out for ages. Here, as in every other business and profession, experience and skill are needed for success. Most of the failures in mining have arisen from the running of useless tunnels in the wrong places, where intelligent miners would not risk a dollar. Many of them have been occasioned by extravagant expenditures by men who never saw a mine until called to superintend the opening or working of one. *Ne sutor ultra crepidam.* Such work should be left to miners. For the development of this great interest cheap and abundant water is needed. Capital judiciously expended in mining and furnishing water facilities could not fail of reward. Not one sixth of the available water of the mountains is diverted to the use of the mining communities. Yet, if you ask the inhabitants of any of those counties what is needed to develop the deep mines profitably, and

irrigate the orchards and gardens, to make their region again thriving and populous, and he will say, "It is water." Many of these observations apply to quartz mining, which is and will be for generations a profitable pursuit of the State. Thus the great industry that gave the first impulse to the settlement of the State is yet one of its most deserving and promising interests, and must not be omitted or underrated in calculating its resources.

Sitting within the unfolded doors of the Golden Gate, our commerce should bring to us tribute from the opulent East, and direct to us that vast trade which flows in currents as naturally as rivers run to the sea, wherever it flows depositing riches. Our ships were driven from the ocean partially by English cruisers, but kept from it by the impossibility of competition in the foreign carrying trade with the heavy taxation necessary to the late war and the reëstablishment of public credit. The extraordinary expenses of war are happily over, and a partial reduction of the debt, demonstrating that the nation can, if it pleases, extinguish it, has so firmly founded the national credit that only a few partisans advocate repudiation. With this condition of things Congress felt able to add a lengthy free list to the tariff, to reduce the duties on a multitude of articles, to abolish all internal revenue taxes except on spirits and tobacco, and a modified income tax, which ought also to be, and I think will be soon, abolished. The reductions to take effect during the next year amount in round numbers to eighty millions of dollars. With this burden off the industry of the country we can build and sail ships more cheaply than at any period during the past eight years, and I trust we may soon see American commerce prosecuted in American bottoms, and that we may do a part of the carrying trade of the world. Everything that aids foreign commerce builds up our city by the sea, and so far furnishes a market for our products. But I do not think that that object is obtained by a license to buy ships abroad, or transfer foreign lines of mail steamers under our flag, leaving the organizations which own and manage them and absorb their profits, unchanged. Such a measure, coupled with another admitting duty free all articles that go into the manufacture of ships, with a corresponding bounty where the materials are of American production, might be the dictate of wise statesmanship. So inseparably woven together are all our interests, so much does the farmer, the miner, the merchant, and the manufacturer each depend on the other, and so much does the prosperity of each go to make a grand total for our noble State, that these observations may not be deemed misplaced on such an occasion as this when the products and interests of the whole State pass in review. We have reason for thankfulness that, despite the errors of the past and some slight depression of the present, the review is so favorable and the prospect for the future so bright.

Finally, my friends, I congratulate you that our continent is at peace; that we may work out our destiny undisturbed by moving armies, by carnage, famine, and fire. Our peaceful homes are not leveled by deadly missiles, our harvest fields are not trodden red in the blood of men and steeds, our young men and adults are not summoned to fight, our wives and sisters not left to weep. The horrible war that tramples France in the dust, and makes two great peoples contend in hate and suffer wounds beyond estimate, may be the legitimate contest between the aspiration for German unity and the resistance imposed by traditional

balance of power. Or it may arise from deeper causes—from race antipathies, or religious antagonisms. Whatever the causes of the frantic slaughter, let us rejoice that we are a united people, with united interests, and that no such desolation can overwhelm our fair land, or reverse the advancing hand on the dial that indicates our growth in Christian civilization.

ADDRESS.

DELIVERED BEFORE THE STATE AGRICULTURAL SOCIETY AT THE ANNUAL FAIR, SEPTEMBER EIGHTEENTH, EIGHTEEN HUNDRED AND SEVENTY.

By EZRA S. CARR, M. D., L. L. D., Professor of Agriculture, etc., in the University of California.

In coming before you to-day I feel that this should be for us not only a *festival*, but a day of thanksgiving; that it is our privilege to turn from the ghastly panorama of death unfolded in other lands—from harvests laid waste and homes made desolate—to these triumphs of industry. And because our own country has so lately passed through the same desolating fires we are the better able to appreciate by contrast the supreme blessings of peace.

These reunions of the "Soldiers of the Plow" are of far greater value than a careless observer would suppose. The State Fair is not only the *great industrial holiday*, the annual exhibition of our productiveness and skill, but it is the germinating ground of a thousand new ideas, and the grave of as many mistaken and erroneous ones. I think in this and and their social bearings, bringing hundreds of isolated communities into contact around the centre of a common interest and experience, lies their chief value. And I do not see why they are not as profitable to the trader, the capitalist, the political economist, and the schoolmaster, as they are to the farmer. There never has been a time when the best efforts of the willing hand and thinking brain were more imperiously demanded. Our flagging commerce, the agent of our industries, is having a breathing spell in which to ponder the philosophy of trade as well as its mutations. The capital of Europe is hiding itself as if in fear. It is a time when such words as labor, wealth, competition, and coöperation are apt to take new significations.

It is from sources like these voluntary associations of industry that the facts are to be gathered which shall lift these questions into the elevated regions of science.

In coming before you to-day and witnessing such proofs that you understand the value of agriculture, as the foundation of all other culture, of State and national prosperity, I feel that I would greatly prefer to play the part of listener. But as the army scout who goes before to report obstacles in the way of progress, the strength and force of the enemy, claims no fitness for generalship, so I, who do not own a foot of land, offer you some reflections upon *the needs of agriculture*, and especially upon the *needs of agricultural* communities, which I have gathered during

many years experience, East and West, as one of the pioneers of industrial education.

I might claim for myself as early and intimate an acquaintance with this pursuit as the sage of the New York *Tribune*, for I have plowed where plowing was anything but a pleasure ride over fields of flowers, and mowed among bowlders and Canada thistles, where every bushel of corn cost more patience and muscle than a shipload of California's grain. I could match Mr. Greeley's experience on the barren hills of New Hampshire with my own on the Manor of Rensselaer. I also know the hardness of farm work and its unattractiveness to the young; and yet, at the summit of life, where I can survey both the ground passed over and the way I have still to tread, I can say there is no calling as useful, or on the whole as pleasurable, and none which, rightly understood and followed, will call into so active exercise the whole range of human faculties.

I believe this is the testimony of the best minds in all ages, and the question has become one of vital importance to the nation: "How shall we educate our youth so that there shall be *more farmers* and more mechanics in the land, and how shall we raise these pursuits to the rank they deserve in the hierarchy of industries?" It is useless to eulogize callings whose votaries forsake them with every opportunity and whose children turn from them with disgust.

Congress might give every acre of the public domain to found agricultural and industrial colleges, making them not only *free*, but giving a bonus of public lands as a reward of attendance, and still their halls will remain empty, until the relations of labor to human nature are understood and carried into practice; until the farmer, out of his sense of privation, loss, failure, and onesidedness, shall resolve that his children be as carefully cultured as his fields, that they shall grow up in pleasant homes, and be laying up, if not dollars and cents, "capital for after pleasures of thought and memory."

Let us reason together about this business of agriculture, wherein it fails to meet the demands of human nature, and why, in *California especially*, we are looking to the lower class of foreigners for the permanent tillers of our soil, and the supports of our most important industries. It does not seem possible that the energizing, civilizing forces which pushed westward from New England, Virginia, and Carolina, displacing mighty forests by fields of waving grain, are so far spent that we must depend upon other lands for their renewal. It cannot be that the old spirit which planted the wilderness with homes of freemen has departed from us and left nothing but greed of weath and love of show. And yet, how many of the so called liberally educated men of the country would be willing to look to a trade as a means of livelihood, and how many young lady graduates of our female seminaries and high schools are expecting to become farmers and mechanics' wives? We are beginning to see that there can be no healthy, living community without plenty of farmers and mechanics, that the factory and farm must be brought together, and that the *salvation*, not to say civilization, of California depends upon this.

The first thing which the European emigrant seek to possess is *land*. It makes no difference from what part of the country he comes; Irish, Welsh, Swede, or German, the sentiment has been wrought into every fibre of his mental and physical constitution that he is *nobody* without land. He sees in it the foundation of wealth, of all distinction, and family pride, and not until thoroughly Americanized does he come to

regard it a source of speculation. Something of this old fashioned sentiment came over in the May Flower, and got planted on the James River, but in our migrations across the continent has become sadly diluted. It certainly does not now, as then, distinguish the higher classes of society, and if at this day we look for a hearty, genuine love for the land, we shall find it among the humbler classes of emigrants, whose wants have taught them its real value.

The whole Valley of the Rock River in Wisconsin and Illinois is one of almost unequalled fertility, and within my own remembrance has been twice colonized, first by settlers from New York and New England, the crest of the wave which in receding peopled Michigan (and which today makes its moral and mental atmosphere almost identical with those States), and secondly by Germans and Scandinavians. The first came in and took up extensive tracts of land which they cropped year after year with wheat, burning their straw, and returning nothing to the soil. They cut down the spare timber of the openings, and the climate being then considered unfavorable for fruit growing, left nothing in its place. By the time their farms were well fenced, comfortable houses and barns erected, they discovered that the crops were not as heavy as formerly, there were more frequent droughts, more "chinch bugs;" many of the pioneers sold out and moved to Missouri, Kansas, and the Pacific Coast. Meanwhile the hardy Norwegian and German emigrants, who coming later, had taken up the less desirable sections of wild land, saving in European fashion every scrap of manure, planting trees and vines, and gathering more closely into communities and neighborhoods, have been able in many cases to buy out these improved American homesteads, until in some locations the entire nationality has been changed, *certainly not for the worse*, if the accumulated increase of population and the value of the land is considered. Wisconsin, Iowa, Minnesota, and more lately Missouri have gained immensely in gaining this home making element.

For whatever reason the love of country life, which has been a characteristic of our blood and race, has so greatly lessened then, *it is greatly to be deplored*. While the laboring millions of England stand in an almost menacing attitude before her few hundred landholders, and are forced to emigration as their only resource, our own youth voluntarily turn away from the modest secure gains of steady industry to the uncertainties of city life and the excitements of speculation.

How can we bring about a change in this respect and develop a higher sentiment for that which in older lands represents not only a certain amount of money, but social standing, leisure, and culture?

I believe the only way to do this is to educate our youth, boys and girls, into a respect for those pursuits, to provide *liberally for such education*, and to multiply in every possible way the social enjoyments and embellishments of rural life.

We must take the social nature of man into the account, and not expect our children, at the age when social attractions are the strongest, to dig and delve, and endure the privations which were common under a former condition of things. When I remember how often the growing boy was overworked, the short time he had for study and recreation, the disadvantages with which he entered cultivated society, I do not wonder that the farmer's son turns to other occupations; or that the ceaseless household cares of the farmer's wife, in homes where beauty has not softened the hard outlines of utility, homes without music, books, or flowers, should discourage and disgust her daughters.

Men have left the farm because the refinements of life, its higher

relations and enjoyments have been lost sight of, and because the demand for educated men in other callings has been greater than the supply. We must change all this. We must become less greedy of money, more craving of neighbors than of acres; we must apply the principles of coöperation in the purchase and use of machinery as a small beginning in the direction of social agriculture.

When capitalists abandon speculation and engage in promoting and diversifying industry; when farmers can purchase and own the lands they cultivate, and not till then will agriculture take the place it deserves in the scale of human activities. The time when all these fertile valleys and foothills are covered with happy homes need not be so far away. In southern California, Anaheim furnishes a good illustration of the advantages of social over isolated settlements. The rapid growth of such places as Vineland, New Jersey, proves that there is a genuine love for rural life in the community when it can be obtained without the loss of social privileges. And the growing tendency of city population toward suburban life, as shown in the formation of our numerous homestead associations, is another proof that nature is still consistent with herself.

Here horticulture, the *original fine art*, which weaves a web of beauty around the lowliest home, becomes the uniting link between city and country. The cultivation of a small garden spot, its harvest of pure and simple pleasures begets a longing for the wider fields and freer life of the farm. I rejoice in the almost universal evidence of this taste. To the stranger in California the clump of lilies blooming in mid winter by every cottage door, the flowering vines wreathed around porch and window, are a more irresistible attraction than the gold of her mines or the wealth of her commerce.

But no social organization, however perfect and attractive, will suffice to permanently elevate our industries. This can come only through education.

I am aware that there is a prejudice against "book farming," and that mother wit and plenty of manure are in older sections of the country considered the great essentials of successsful agriculture. That kind of farming has had its day, just as pans and rockers have had their day in mining. When you think that science is simply the record of experience in these matters, the history of experiments and of their results—when you think whether it would be gain or loss to have all the agricultural journals and manuals removed, all statistical information withheld, and the transmission of the most valuable knowledge this age is gaining left to tradition—you are prepared to estimate what science has done and is doing for us. Still more, my practical friend, go back to the implements which your great grandfather, who was "no fool, sir," hoed and harvested and "thrashed" with. Buy a little wheel and a big wheel, and a reel and loom and dye tub for your wife, and after using them faithfully for a year, come back and tell me what you think of the service which inventors of machinery and improvers of varieties of plants, and men sent out by our institutions and learned societies to find whatever new and precious thing can be impressed into man's service, have done for the world.

When I meet a mechanic who is inclined to depreciate the value of education, who points to "successful men" who have made their lucky hits without it, and who is inclined to follow his calling in a mindless, empirical way, realizing none of the relations of his pursuits to great material and social laws, I say: "My friend, all your interests are at the

mercy of others—of men who have built up vast fortunes, secured to themselves vast monopolies, made peace and war in spite of you, burdened you with taxation—because your *craft* is only *handicraft*. A wise foresight toward self-preservation will drive you to education, if all other motives fail."

It is true there has been a great gulf between the abstract and practical sides of agricultural science in past years, but this is being rapidly bridged over in our own country, and I propose to show you how much more extensively in those countries where agriculture is the most successful and its pursuit most signally honored.

You are aware that in Prussia the Government requires that every child be educated, assuming it to be the right and duty of the State to protect itself from ignorance as well as crime. She enjoys the enviable reputation of being first among nations in this respect. All Germany, Austria, and of late Russia, are following her example in educating their farmers and mechanics as well as their lawyers, doctors, and clergymen. To insure this they have established special schools, with every appliance of land, buildings, and apparatus, taking students from the higher classes of the public schools or otherwise, and training them for their pursuits as superintendents, overseers, or laborers. A description of one of these schools, which has served for a model for the rest of Europe, will suffice for all.

"The Royal Land and Forest Academy" of Wurtemburg is situated at Hohenheim, a few miles from Stuttgardt. You would find there a large farm adjoining a Government forest of five thousand acres (these practical Germans know the importance of taking care of and cultivating *forest trees*), of which some twenty acres are divided into one hundred plats used for experimental purposes, whereon questions pertaining to soils and their treatment, and methods of treatment of new plants, are tested. A botanical garden covering several acres exhibits all the varieties of plants which can be grown in that climate. There is a beet sugar factory, a brewery, a distillery, a starch factory, a vinegar factory, a malting and fruit growing establishment, a silkworm establishment, and machine shops where agricultural implements are manufactured—for here the best models for Germany are found. The studies are carried on in connection with actual practice in the field and forest, and embrace the general principles of agriculture, composition and quality of soils, special plant culture, *meadow culture*, grape, hop, and tobacco culture, fruit culture, vegetable culture, breeding of domestic animals in general, horses, cattle, sheep, and smaller animals; silk culture, bee culture, dairying and practical farm business. Parallel with this practical instruction there is carried along through the course of study, arithmetic and algebra, bookkeeping, a knowledge of the laws and principles of taxation, physics, general and agricultural chemistry, geology, vegetable physiology and zoölogy, veterinary science, and the study of foreign trees and their uses.

In the higher departments you will find the sons of the gentry fitting themselves for the general management of estates; ambitious young men of the middle class fitting themselves for stewards; lower down, the sons of peasants, between the ages of fourteen and eighteen, who wish to become familiar with the routine of farm work, and who spend three or four hours in study and the rest in actual labor.

Any one can have instruction in the special subjects taught. Besides,

there is a course of three weeks of public school vacation, *in which common school teachers are posted up in the general principles of agriculture*, an example I greatly wish we might imitate in this country.

Nor is this all, or even the greater part of what those enlightened Governments are doing for the promotion of agriculture. Scattered through various neighborhoods are what are called experimental stations, where from twelve to twenty acres are divided into small sections for experiments in fertilizers, rotation of crops, etc., with a chemical laboratory and professor attached; with accommodations for animals, that questions of breeding, feeding, fattening, etc., may be authoritatively settled.

What I have said of Prussia is also true of Austria. But Russia, of all European States, has in the last few years pushed her efforts in this direction to the grandest results, making a chain of agricultural schools from St. Petersburg to the Caucasus. In eighteen hundred and fifty-six the first of these was founded at Gorigoritz, and since then special schools have been established for special cultures, such as flax, silk, etc., according to the soil, climate, habits, and needs of the people. To the great academy of "Agriculture and Forestry," near Moscow, the Government makes an annual appropriation of one hundred thousand dollars. In Caucasia the tuition is not only made free, but small incomes are secured to the students, ranging from forty dollars for the first year to eighty dollars for the fourth and last.

What have we to show in comparison with all this? Until within a very few years there has been no State patronage of agriculture, except the little that could be accomplished by State societies organizing annual exhibitions and Fairs, which have been nearly or quite self-supporting.

The National Bureau, at Washington, restricted by inadequate appropriations and seriously interrupted by the war, has nevertheless steadily worked on in building up a vast repository of all useful information respecting agriculture in all its branches. This economic knowledge has been freely dispensed through its reports. It has gathered seeds and cuttings from every part of the globe, directed public attention to new objects, and has its corps of observers and reporters investigating the most important subjects of climates, soils, fertilizers, and destructive insects. Every farmer ought to feel the importance of a representation which will foster and sustain this long neglected branch of the public service, and to keep himself informed with regard to its work. It is all the more important because our system of agriculture, like our system of Government, must be developed according to new conditions, and not in a blind imitation of foreign models.

With the exception of efforts made in Michigan and one or two other States, the subject of agricultural education was practically ignored in this country until Congress, by the Act of July second, eighteen hundred and sixty-two, gave to each of the States the means of founding (*not of sustaining*) institutions having this for their object. The *object* of this grant was, without a doubt, *to make more farmers and mechanics*, and not, as I have heard it claimed, to educate the sons of farmers and mechanics. Were the latter all that was contemplated, it would be right to hitch an agricultural professor or two to some existing college—feeder of the professions, and take the income of the grant as a quid pro quo; but I know of no reason why Congress should educate your son more than your doctor's, but I do see a very good reason for establishing great manufactories of intelligent industry. This Congress has aimed

to do, and to its credit be it said, in the darkest hour of the struggle to preserve the national existence.

The amount of benefit which each State will receive depends entirely upon the intelligent administration of the fund thence derived, the good faith in which the spirit of the act is carried out, and the hearty coöperation of the people. The proceeds from the sale of the lands has not yet been sufficient to put any of the institutions founded upon or assisted by the grant in full working order. The Empire State having the largest representation got the lion's share, and had a citizen rich and public spirited enough to add to the endowment five hundred and fifty thousand dollars cash, thus relieving the necessity for an immediate sale of the lands, which, carefully selected and located under his supervision, now exceed in value two and a half millions of dollars!

Ezra Cornell has thus, with the help of the General Government, founded an institution where "any man can receive instruction in any study"—a college for the whole people. Where is the Ezra Cornell of the Pacific coast?

The State of California, accepting her share of the Nation's gift, has by a wise legislation made it the foundation of one of the colleges of the State University. The University completes the State educational system, and is the crown and summit of that noble edifice of free instruction which guaranties to every child the general culture and special training necessary to energize and economise, to lighten and enlighten all labor. This is as it should be, but it is not for the interest of California, it is not for the interest of her farmers and mechanics, that the matter should end here.

There are colleges enough for general culture; every denomination has its own, where the common legacy of literature and science is received through some of the many colored theological lenses, *and of whose graduates it is estimated that not more than one per cent ever fill your ranks.* West of the Rocky Mountains there was not one industrial college ready to take your children from the public or high school, so that every step may tell upon their life business, and at the same time show them its wide relation to other pursuits and to the public welfare thus fitting them for citizenship. Nor was there *until October third, eighteen hundred and seventy*, a single school, or college, or university adapted for the suitable training of *farmers or mechanics' wives.* I am ashamed that in matters of education we have so long behaved as if it were better for man to be alone in his higher life, condemning him to an intellectual celibacy.

Perhaps this accounts for the unproductiveness and unprofitableness of so much of his work, but from whatever other walk of life we may exclude woman, she is as indispensable to the last as she was to the first farmer. And if ever toil and care lose their wrinkles and labor is ennobled and sanctified, it will be through her help and ministry; nor will the higher education ever be complete until the science of housewifery is as thoroughly taught as the science of husbandry.

The University of California proposes to furnish all the youth of the State with a theoretical education *leading towards industrial pursuits*, and to exhibit the practical applications of science to the culture of our varied products, the development of our mineral wealth, and our manufactures. It makes this education forever free, and admits young women to all its general and special advantages. Its competitive scholarships are open to all.

In organizing the University our Regents have followed the highest standards and Americanized the best models, but to carry on their work and realize their designs they must have the hearty and intelligent coöperation of the people.

It is proposed to gather at the University, at convenient seasons, those interested in special cultures for mutual instruction and encouragement, a work as indispensable as that accomplished by Teachers' Institutes for the public schools.

It proposes to furnish the facilities for all needful experiments; to be the "station" where tests can be made of whatever claims attention; to become the exponent and repository of our progressive knowledge. It will possess a complete collection of models in machinery, of seeds and woods, and textile materials. Its gardens and orchards, formed for instruction, will become a museum of pomology and horticulture, so classified and arranged that it may be read by all. In short, it will be the volume wherein the gifts of a beneficent Creator to this land and people have each their appropriate pages, and every letter a type of beauty, having more than a *material* significance.

Our climate makes the naturalization of every product useful to man possible, at least for purposes of instruction and experiment, for the history of our fruit culture makes us modest in saying what man may not do under these favoring conditions of climate and soil. Nor can I believe that the farmers of California will permit their homoculture to fall below their horticulture in excellence.

I have spoken thus freely and plainly of what the University hopes to accomplish, because it *belongs to the people*. You hold in trust the Nation's gift; you have generously added another which will greatly increase its resources. Our schools are the high water mark of our civilization; this school must necessarily be the high water mark of your appreciation, *as a class*, of the value of industrial education.

If the people determine that their children shall be put in full possession of all their faculties, because they need the full power of manhood and womanhood as much in one pursuit as in another, it will be done. If the people see in the public school the only place where the foreign elements which now enter into our political body can be digested and assimilated and Americanized, they will jealously guard and generously supply every department of public education. We have taught Europe to respect popular government, let us accept her teaching in whatever she excels. She has been pouring a flood of emigration upon us and compensating herself with the flower of our youth to whom she could offer superior advantages of education, with our scholars and capitalists to whom she offers the accumulations of centuries of culture, where money has not been the *only* object of pursuit, and men are content with slower and more moderate fortunes.

It is not extravagant to place agriculture at the head of industrial callings. It holds that place in the oldest Scriptures, the oldest literature and mythology. "Human history opens neither in forests nor in cities, but in a garden which the Lord God planted." As long as men must live by bread the hills and valleys must wave with the wealth of harvests, and multitudes be busied in the achievements of peaceful labor. How to dignify this labor with knowledge, and enrich it with thought, and beautify it with contentment, is a great problem. As the art of life is learned it will be found that man cannot live by bread alone—beauty

and sympathy are also the bread of humanity. And the time is surely not very far off when the measure of *service* will be the measure of human greatness.

"Give fools their gold and knaves their power,
Let fortune's bubbles rise and fall;
Who sows a field, or trains a flower,
Or plants a tree, is more than all.

"For he who blesses most is blest,
And God and man shall own his worth
Who toils to leave as his bequest
An added beauty to the earth."

SPEED PROGRAMME, 1870.

MONDAY, SEPTEMBER 12th.

FIRST RACE.

Trotting Race.—Mile heats; three in five; free for all stallions; purse—four hundred dollars; first horse, three hundred dollars; second, one hundred dollars.

Entries.

1. James L. Eoff, Colusa, enters blk. s. Blackbird.
2. John McDonald, San Francisco, enters br. s. F. F. Low.
3. H. Walch, San Francisco, enters s. s. Venture.
4. John Mackey, Sonoma, enters s. Alexander.
5. Charles Shear, Yolo county, enters s. Primus.

Result.

Blackbird	3	4	4	2	1	1	1
F. F. Low	1	1	2	3	2	2	2
Venture	2	2	3	4	drawn.		
Alexander	4	3	1	1	3	dis.	
Primus	drawn.						

Time—2:34¾; 2:36½; 2:35¾; 2:39; 2:37; 2:41; 2:42.

SECOND RACE.

Trotting Race—Mile heats; three in five; free for all horses that have never beaten 2:50; purse—eight hundred dollars; first horse, five hundred dollars; second, two hundred dollars; third, one hundred dollars.

Entries.

1. James L. Eoff, San Francisco, enters s. m. Baltimore Belle, (formerly Annie Stephens).
2. Barney Rice, San Francisco, enters s. g. Alex. Benham.
3. J. B. Stanton, Sacramento, enters b. g. Clipper.
4. A. F. Smith, Sacramento, enters b. m. May Fly.

Result.

Baltimore Belle	2	3	3
Alexander Benham	3	2	2

Clipper	dis.
May Fly	1 1 1

Time—2:39; 2:37½; 2:39¼.

TUESDAY, SEPTEMBER 13TH.

FIRST RACE.

Running Race—Sweepstakes for three year olds; mile heats; three in five; one hundred dollars entrance added; fifty dollars forfeit; to name and close with Secretary of Society on or before the twentieth of August; purse—five hundred dollars, to be divided in same proportion as other purses.

Entries.

D. E. Callahan, Sacramento, enters b. f. Nell Flaherty, three years old, by Rifleman, dam Jennie Hull.
Henry Walch, San Francisco, enters b. f. Susy Martin, three years old, by Norfolk, dam Pile, by Belmont.
William Meek, Haywood, enters b. c. Phil Sheridan, three years old, by Norfolk, dam Bonny Belle.
John Greer, Sacramento, enters g. c. Tom Atchison, three years old, by Norfolk.
N. Briggs, Napa, enters ch. f. ——, three years old, by Billy Cheatham, dam by Ashland.

Result.

Nell Flaherty	3 1 1 1
Susy Martin	5 dis.
Phil. Sheridan	2 3 dis.
Tom Atchison	1 2 2 2
Briggs' filly	4 4 dis.

Time—1:46⅗; 1:47; 1:49⅗; 1:50⅘.

SECOND RACE.

Running Race.—Two mile heats; free for all; purse—eight hundred dollars. First horse, five hundred dollars; second horse, two hundred dollars; third horse, one hundred dollars.

Entries.

R. T. O'Hanlon, San José, enters s. h. Medoc.
Thomas Atchison enters b. h. Bloomsbury.
H. Walch enters br. h. Sacramento.
Theodore Winters enters gr. h. Queen.
J. T. Devine enters b. h. Kirby Smith.
——— ——— enters —— Wakefield.

Result.

Medoc	2	dr.
Bloomsbury	3	dist.
Sacramento	5	2
Queen	4	3
Kirby Smith	1	1
Wakefield	dist.	

Time—3:44$\frac{1}{5}$; 3:49$\frac{2}{5}$.

WEDNESDAY, SEPTEMBER 14TH.

FIRST RACE.

Trotting Race.—Mile heats; three in five; free for all; purse—six hundred dollars. First horse, three hundred and fifty dollars; second horse, one hundred and fifty dollars; third horse, one hundred dollars.

Entries.

1. B. E. Harris enters b. g. Regulator.
2. J. S. Eoff enters b. g. Shoo Fly.
3. H. Walch enters s. h. Venture.

Result.

Regulator	2	2	1	1	1
Shoo Fly	1	1	2	2	2
Venture	dist.				

Time—2:30$\frac{2}{5}$; 2:31$\frac{3}{5}$; 2:30$\frac{4}{5}$; 2:32$\frac{3}{5}$; 2:31.

SECOND RACE.

Trotting Race.—Mile heats; three in five; free for all horses that have never beaten two minutes and forty seconds; purse—one thousand dollars; first horse, six hundred dollars; second horse, three hundred dollars; third horse, one hundred dollars.

Entries.

1. John Boggs enters ch. g. Jerome.
2. Alex. Sturgeon enters b. g. Billy Russell.
3. J. S. Colgrove enters b. m. Flora.
4. S. B. Whipple enters b. m. Harvest Queen.
5. J. S. Eoff enters b. m. Don't-Bodder-Me.

Result.

Jerome	2	2	0	0	2
Billy Russell	3	5	3	dist.	
Flora	4	3	4	dist.	
Harvest Queen	1	1	2	2	1
Don't-Bodder-Me	5	4	Dist.		

Time—1:32$\frac{4}{5}$; 2:38$\frac{3}{5}$; 2:32; 2:35$\frac{2}{5}$; 2:29$\frac{1}{2}$.

THURSDAY, SEPTEMBER 15TH.

FIRST RACE.

Running Race.—Two-mile heats; free for all three year olds; purse—eight hundred dollars. First horse, five hundred dollars; second horse, two hundred dollars; third horse, one hundred dollars.

Entries.

J. E. Tyree, Stockton, enters s. f. Carrie Miller, three years old, by Veto; dam, Fanny Medoc.

John Boggs, Princeton, enters b. f. Eva Bascomb, three years old, by Lodi; dam by Belmont.

Theo. Winters (W. Cobb), enters b. c. Pill Box, three years old, by Norfolk; Adie colt, by Bob Johnson.

R. T. O'Hanlon enters b. f. Maria Hall, three years old, by Norfolk; dam by Heenan.

Result.

Carrie Miller	1	3	4	dist.
Eva Bascomb	2	4	1	2
Pill Box	4	1	2	1
Maria Hall	3	2	3	ruled out.

Time—3:43$\frac{1}{5}$; 3:49; 3:53$\frac{1}{5}$; 3:55$\frac{4}{5}$.
First Mile—1:50; 1:51$\frac{1}{2}$; 1:58; 1:57$\frac{1}{4}$.

SECOND RACE.

Running Race.—Mile heats, three in five; free for all; purse—seven hundred dollars. First horse, four hundred dollars; second horse, two hundred dollars; third horse, one hundred dollars.

Entries.

Nathan Coombs, Napa, enters s. g. May-be-so, six years old, by Ashland; dam, Beechey Run.

J. T. Devine, Sacramento, enters b. h. Kirby Smith, five years old, by Gladiator; dam, Kate Mitchell.

R. T. O'Hanlon enters c. h. g. Al. Bascom. four years old, by Rifleman; dam, Fashion Bellma.
Thos. Atchison enters b. s. Idaho, four years old, by Volscian; dam, Endra.
E. Bent enters s. g. John Morgan, three years old, by Billy Cheatham; dam, by Niger Boy.

Result.

May-be-so	3	4	3
Kirby Smith	4	3	dist.
Al. Bascomb	1	1	1
Idaho	2	2	2
John Morgan	dist.		

Time—1:48⅖; 1:50⅖; 1:49⅖.

THIRD RACE.

Running Race.—Single dash of one mile; free for all two year olds; to name and close on or before the twentieth of August with the Secretary of the Society; fifty dollars entrance added; twenty-five dollars forfeit; purse—three hundred dollars, to be divided in same proportion as other purses.

Entries.

D. E. Callahan, Sacramento, enters h. Ben Butler. two years old, by Rifleman; dam, Jennie Branch.
John Boggs, Colusa. enters b. c. Mark Twain, two years old, by Norfolk; dam, Ariadne.
W. K. Squires, Rio Vista, enters b. m. Lady Norfolk, two years old, by Norfolk; dam, Cheatham.
A. Musick, Sacramento, enters b. s. Mark Moore, two years old, by George Moore; dam, Sallie Franklin.
Nathan Coombs, Napa, enters ch. f., two years old, by Billy Cheatham; dam by Ashland.
John Hall, Alameda, enters b. f. Jennett, two years old, by Woodburn; dam Esparanza, by Ringgold.
E. Bent, Contra Costa, enters s. f. Marietta Simes, two years old.

Result.

Ben Butler	dead heat.	2
Mark Twain	0	0
Lady Norfolk	0	0
Mark Moore	3	0
Coombs filly	0	1
Jennett	dead heat.	
Marietta Simes	0	0

Time—1:51⅘; 1:55⅕.

FRIDAY, SEPTEMBER 16th.

FIRST RACE.

Trotting Race—Two mile heats; free for all; purse, eight hundred dollars; first horse, five hundred dollars; second horse, two hundred dollars; third horse, one hundred dollars.

Entries.

1. B. E. Harris enters b. g. Regular.
2. John Boggs enters s. g. Jerome.
3. S. C. Boley enters b. g. Dexter.
4. George Treat enters ch. s. Venture.

Result.

Regulator	2		dis.
Jerome	3	2	
Dexter	1	1	
Venture	dis.		

Time—5:06½; 5:08⅕.

SECOND RACE.

Pacing Race—Mile heats; three in five; Billy Mayo to wagon, Longfellow to harness, and all others to go as they please; purse, four hundred dollars; first horse, two hundred and fifty dollars; second horse, one hundred dollars; third horse, fifty dollars.

Entries.

1. S. C. Boley enters s. g. Longfellow.
2. C. H. Shear enters b. g. Americus.
3. H. S. White enters blk. g. Onward.

Result.

Longfellow	1	1	1
Americus	dis.		
Onward	2	2	2

Time—2:28; 2:30⅖; 2:32⅖.

THIRD RACE.

Mile heats; three in five; special purse, one hundred and fifty dollars; first horse, one hundred dollars; second horse, fifty dollars.

Entries.

1. Algerine.
2. Rosedale.
3. Alameda Maid.

Result.

Algerine	3	3	3	2
Rosedale	1	1	2	1
Alameda Maid	2	2	1	dis.

Time—2:50; 2:47¼; 2:46⅗; 2:48⅖.

SATURDAY, SEPTEMBER 17TH.

FIRST RACE.

Trotting Race.—Mile heats; three in five; free for all horses that have never beaten two thirty-four; purse—eight hundred dollars; first horse, five hundred dollars; second horse, two hundred dollars; third horse, one hundred dollars.

Entries.

1. S. G. Boley enters b. g. Dexter.
2. A. T. Smith enters b. m. May Fly.
3. John Mackey enters b. s. Alexander.

Result.

Dexter	1	2	1	1
May Fly	dis.			
Alexander	2	1	2	2

Time—2:35; 2:37½; 2:32½; 2:36⅖.

SECOND RACE.

Running Race.—Mile heats; three in five; free for all; purse—eight hundred dollars; first horse, five hundred dollars; second horse, two hundred dollars; third horse, one hundred dollars.

Entries.

1. Martin Howell enters b. h. White Stocking, blue and white.
2. R. T. O'Hanlon enters s. g. Al Bascomb, blue and white.
3. Thomas Atchison enters b. h. Idaho, blue and red.
4. H. Walch enters br. c. Oliver Cromwell, fancy.

Result.

White Stocking	dist.		
Al Bascomb	1	1	1
Idaho	2	3	3
Oliver Cromwell	3	2	2

Time—1:48; 1:51; 1:53⅖.

THIRD RACE.

Running Race—Mile heats; free for all beaten horses; purse—five hundred dollars; first horse, two hundred and fifty dollars; second horse, one hundred and fifty dollars; third horse, one hundred dollars.

Entries.

William Meeks enters b. h. Sacramento, four years old, by Rifleman, dam Bonnie Belle.

Thomas Atchison enters b. h. Bloomsbury, six years old, by Bertin, dam Bonnie Belle.

H. Walch enters b. f. Lizzie Martin, three years old, by Norfolk, dam Pelo.

N. Coombs, ch. f. Briggs' Filly, three years old, by Cheatham, dam by Ashland.

Result.

Sacramento	4	dist., crossing, foul riding.
Bloomsbury	3	dist. flag.
Lizzie Martin	2	dist. flag.
Briggs' Filly	1	1

Time—1:50; 1:49⅝.

PREMIUMS AWARDED IN 1870.

FIRST DEPARTMENT.

THOROUGHBRED HORSES.

Exhibitor.	Animal.	Premium.
	Stallions.	
Nathan Coombs	Best stallion, four years old and over—Lodi	$75
L. P. Marshall	Best stallion, three years old—Montana	$50
John Hall	Best stallion, two years old—Ironclad	$40
J. Glucauf	Best stallion, one year old—General Bidwell	$30
John Hall	Best stallion colt under one year—Peggy Ringgold's colt	$20
	Mares.	
J. Glucauf	Best mare, four years old and over, with colt—Pastora	$60
George Treat	Best mare, four years old and over—Virginia	$50
John Dixon	Best mare, three years old—Emma Barnes	$40
John Hall	Best mare, two years old—Jeannette	$30
J. Glucauf	Best mare, one year old—Antelope	$25
Theodore Winters	Best mare colt, under one year—Evadne	$20
	Families.	
Theodore Winters	Best thoroughbred sire, with not less than ten of his colts, all thoroughbred—Norfolk	$100
Theodore Winters	Best thoroughbred dam with not less than four of her colts—Evadne	$60
David Freme	Best stallion other than thoroughbred, with not less than ten of his colts—George Moore	$75
A. Ely	Best dam, with not less than three of her colts—Nora	$50

HORSES OF ALL WORK.

Exhibitor.	Animal.	Premium.
	Stallions.	
D. M. Downey	Best stallion, four years old and over—Solano Chief	$40
R. A. Branton	Best stallion, two years old—Tickly my Fancy	$20
	Mares.	
George McWain	Best mare, four years old and over—Julia Ann	$30
L. Upson	Best mare, three years old—Queen	$20
L. Upson	Best mare, two years old—Rosa	$15
Peter Burns	Best mare, one year old—Nancy	$10

GRADED HORSES.

Exhibitor.	Animal.	Premium.
	Stallions.	
C. B. Hoffman	Best stallion, four years old and over—Lexington	$50
D. Berry	Best stallion, three years old—Henry Williamson	$40
A. Ely	Best stallion, two years old—Wesley	$30
M. E. La Murray	Best stallion, one year old—Clarence Manegan	$20
A. Ely	Best colt under one year, without reference to sex—No Name	$20
	Mares.	
A. Ely	Best mare four years old and under—Nancy	$40
C. H. Shear	Best mare, four years old and over, with colt—Alicia Mandeville	$50
C. B. Hoffman	Best mare, three years old—Ida May	$30
A. Ely	Best mare, two years old—Henrietta	$20
A. Ely	Best mare, one year old—Ceta	$15

DRAFT HORSES.

Exhibitor.	Animal.	Premium.
	Stallions.	
Henry Meachan	Best stallion, four years old and over—Pollok	$40
C. Barr	Best stallion, three years old—Barr's Dragon	$30
A. T. Nordyke	Best stallion, two years old—Young John Bull	$20
J. N. Dudley	Best stallion, one year old—Robert Bruce	$15
	Mares.	
Maurice Haley	Best mare, four years old and over, with colt—Molly and colt	$40
R. A. Branton	Best mare, one year old—Bessie	$15

ROADSTERS.

Exhibitor.	Animal.	Premium.
	Stallions.	
E. M. Skaggs	Best stallion, four years old and over—Young Rattler	$50
Lewis Dietz	Best stallion—St. Clair	$20
Colgrove	Best stallion, three years old—Whipple	$40
D. Flint	Best stallion, two years old—Yankee Blade	$30
	NOTE.—Judges recommend a premium for William Woodward's two years old gelding Honest John, no premium being offered for said horse.	
John Colgrove	Best gelding, four years old and over—Joseph	$40
	Mares.	
S. B. Whipple	Best mare, four years old and over—Lady Blanchard	$40
John Colgrove	Best mare, three years old—San Mateo Maid	$30
F. W. Hatch	Best mare, two years old—Nan	$20
	NOTE.—Recommend special premium to horse Honest George, stallion of all work.	
E. M. Skaggs	Best matched span carriage horses—Lady Washington and Lady Bell	Silver goblet—$40
W. B. Holcombs	Best double team roadsters—Bucephalus and Sherman	Silver goblet—$40

SADDLE HORSES.

Exhibitor.	Animal.	Premium.
J. W. Hawkins	Best saddle horse—Jeff Davis	Fine bridle
	Colts. For all except those entered as thoroughbred or graded.	
D. Flint	Best yearling horse colt—Edwin Forrest	$30
D. Flint	Best sucking horse colt—Blondin	$20
A. A. Trowbridge	Best yearling mare colt—Ellen	$20
A. Ely	Best sucking mare colt—No Name	$15
W. R. Wright	Best yearling horse colt—George	Special—$15

SWEEPSTAKES.

Exhibitor.	Animal.	Premium.
N. Coombs	Best stallion of any age—Lodi	Silv. pitcher—$150
Glucauf	Best mare of any age—Pastora	Silv. pitcher—$100

JACKS AND MULES.

Exhibitor.	Animal.	Premium.
E. Jacobs	Best jack—Sampson	$50
Thomas Edwards	Best jennet—Lady Franklin	$40
E. Jacobs	Best mule, two years old and over—Sam	$20
R. J. Houston	Best mule, one year old—Coaley	$15

DURHAM CATTLE.

Exhibitor.	Animal.	Premium.
	Bulls.	
Coleman Younger	Best four years old and over—Jeff Davis	$75
C. Younger	Best three years old and over—Glencoe	$40
Clark & Cox	Best two years old and over—U. S. Grant	$30
G. N. Sweezy	Best one year old and over—Duke of Cuba	$25
C. Younger	Best bull calf—Prince Charles	$15
	Cows.	
C. Younger	Best four years old and over—Rose Bud	$50
G. N. Sweezy	Best three years old and over—Beauty	$40
C. Younger	Best two years old and over—Lucky Lass	$30
C. Younger	Best one year old and over—Lady Kemp	$20
C. Younger	Best heifer—Lady Bell	$15

DEVONS.

Exhibitor.	Animal.	Premium.
	Bulls.	
J. R. Rose	Best four years old and over—Bloomfield	$75
S. Daniels	Best two years old and over—Victory	$30
J. R. Rose	Best one year old and over—Phil. Sheridan	$25
J. R. Rose	Best bull calf—Captain	$15
	Cows.	
S. Daniels	Best four years old and over—Ida	$50
J. R. Rose	Best three years old and over—Maude Second	$40
S. Daniels	Best two years old and over—Lassie	$30
Seneca Daniels	Best one year old and over—Belle	$20

AYRSHIRES.

Exhibitor.	Animals.	Premium.
	Bulls.	
S. Daniels	Best four years old and over—Sir Walter Second	$75
	Cows.	
S. Daniels	Best four years old and over—Ruth	$50
S. Daniels	Best two years old and over—Christie	$20

GRADED CATTLE.

Exhibitor.	Animal.	Premium.
	Bulls.	
E. Comstock	Best two years old and over—Billy	$20
Pete Burns	Best one year old and over—George	$15
G. N. Sweezy	Best bull calf—Ashland	$10
	Cows.	
J. D. Patterson	Best four years old and over—May Bird	$30
E. Comstock	Best three years old and over—Lilly	$20
Clark & Cox	Best two years old and over—Jennie Cox	$15
G. N. Sweezy	Best one year old—Ada	$10

CATTLE SWEEPSTAKES.

Exhibitor.	Animal.	Premium.
C. Younger	Best bull of any age or stock—Glencoe	$75
G. N. Sweezy	Best cow of any age or stock—Beauty	Silver pitcher—$50

SWINE.

Exhibitor.	Animal.	Premium.
Peter Burns	Best boar, two years old and over—Dick	$20
Charles Green	Best boar, six months and under one year—George	$10
	Breeding Sows.	
A. T. Nordyke	Best breeding sow, two years and over—Bright.	$15
Peter Burns	Best breeding sow, one year old—Dolly	$15
Peter Burns	Best sow, six months and under one year—Mary	$10
Charles Green	Best lot of not less than five pigs	$20

POULTRY.

Exhibitor.	Animal.	Premium.
Peter Burns	Best lot of white or gray Dorkings	$5
Peter Burns	Best lot of Jersey blues	$5
Charles Green	Best lot of Sumatra game	$5
Peter Burns	Best lot of English game	$6
Peter Burns	Best lot of white and dark Brahmas	$5

DUCKS.

Exhibitor.	Animal.	Premium.
Peter Burns	Best lot of ducks	$5

SHEEP—THOROUGHBRED SPANISH MERINOS.

Exhibitor.	Animal.	Premium.
	Rams.	
Thomas McConnell	Best ram, two years and over—King William	$30
Thomas McConnell	Best three ram lambs	$20
	Ewes.	
Thomas McConnell	Best three ewes, two years and over	$20
Ellen McConnell	Best three ewes, under two years	$20
Thomas McConnell	Best five ewe lambs	$20

FRENCH MERINOS.

Exhibitor.	Animal.	Premium.
	Rams.	
J. H. Glide	Best three ram lambs	$20

CROSS BREEDS OF THOROUGHBRED SPANISH AND FRENCH.

Exhibitor.	Animal.	Premium.
	Ewes.	
A. S. McWilliams	Best three ewes, two years and over	$20
A. S. McWilliams	Best three ewes, under two years	$20

GRADED SPANISH MERINO.

Exhibitor.	Animal.	Premium.
	Rams.	
Ellen McConnell	Best ram, under two years old	$20
	Ewes.	
Thomas McConnell	Best three ewes, over two years	$15
Ellen McConnell	Best three ewes, under two years	$15

SOUTHDOWNS—SPECIAL ENTRY.

Exhibitor.	Animal.	Premium.
	Rams.	
H. A. Rawson	Best ram, over two years	

GRADED SOUTHDOWN.

Exhibitor.	Animal.	Premium.
	Rams.	
H. A. Rawson	Best ram, under two years	

COTSWOLDS, THOROUGHBRED.

Exhibitor.	Animal.	Premium.
	Rams.	
Wm. M. Landrum.....	Best ram, two years and over—Prince of Ontario.....	$30
W. T. Wilson.....	Best ram, under two years—No Name.....	$20
Wm. M. Landrum.....	Best three ram lambs.....	$20
	Ewes.	
T. Butterfield and son..	Best three ewes, two years and over.....	$20
Peter Saxe and son.....	Best three ewes, under two years.....	$20

LEICESTERSHIRE.

Exhibitor.	Animal.	Premium.
W. T. Wilson.....	Best ram, under two years old.....	$20
T. Butterfield and son..	Best three ewes under two years, crossed with Cotswold.....	$15
H. A. Rawson.....	Best ram, two years old and over, crossed with Leicestershire	$20
Thomas Brewster.....	The Committee recommended special mention and premium for ram Neptune, as best mutton sheep of two years old.....	Diploma awarded.

STOCK SHEEP AND MUTTON.

Exhibitor.	Animal.	Premium.
Wm. M. Landrum.....	Best ram, two years old and over—Wm. Wallace	$20
W. T. Wilson.....	Best ram under two years old.....	$15
W. T. Wilson.....	Best three ewes, two years old and over.....	$15
Peter Saxe and son.....	Best three ewes under two years old.....	$10

SWEEPSTAKES.

Exhibitor.	Animal.	Premium.
Thomas McConnell.....	Best ram of any age or breed.....	Silver goblet—$30
Landrum & Rodgers...	Best ewe.....	Silver goblet—$25
W. T. Wilson.....	Best five ewes of any age or breed.....	Silver goblet—$30

GOATS—THOROUGHBRED.

Exhibitor.	Animal.	Premium.
Gray & Gillmore	Best Cashmere goat, buck—Sultan	$20
T. Butterfield and son	Best she goat	$20
T. Butterfield and son	Best three kids	$20

GOATS—GRADED.

Exhibitor.	Animal.	Premium.
Gray & Gillmore	Best lot of three	$15

SECOND DEPARTMENT.

MACHINERY.

Exhibitor.	Residence.	Article.	Premium.
Matterson & Williamson	Stockton	Best Union harvester, header and thresher combined	$20
William Sawdon	Grass Valley	California sewing machine	Special—Diploma.
Erich Lundquist	Grass Valley	Watchmakers' helpmate machine	Diploma.
William Eberhardt	Sacramento	Oval and round turning lathe	Diploma.
Baker & Hamilton	Sacramento	Moulding machine	$5
Baker & Hamilton	Sacramento	Improved separator	Framed Diploma.
Baker & Hamilton	Sacramento	Best cider mill and press	$10
Baker & Hamilton	Sacramento	Best broadcast seed sower	$10
O. Bonny	San Francisco	Best horse rake	Diploma.
O. Bonny	San Francisco	Best grain lifter for header	Diploma.
C. H. Hubbard	Sacramento	Best hay press	$20
Warden, Mitchell & Co	Springfield, O.	Best self-raking reaper	$10
Linforth, Kellogg & Co	San Francisco	Best combined "World" reaper and mower	Diploma and $20
Linforth, Kellogg & Co	San Francisco	"World" mower. The Committee regard this mower superior in design and workmanship, and in having its boxes protected from dust, etc., and its gearing cut so as to give smooth action.	Diploma and $10
W. B. Ready	Sacramento	Best corn cultivator	$5
W. B. Ready	Sacramento	Marsh's harvester	Diploma.
D. F. Gillis	Stockton	Best harrow	$5

MACHINERY—Continued.

Exhibitor.	Residence.	Article.	Premium.
B. F. Gillis	Stockton	Best harrow and seed sower	Framed Diploma.
M. S. Bowdish	San Francisco	Best farm feed mill	$10
Marsh, King, Miller & Co	Sacramento	Best fanning mill	$10
R. Stone	San Francisco	Fanning mill and grain separator	Special—Diploma.
Henry Stone	Silveyville, Solano County	Best windmill	$15
John Boggs	Chico	Best beehive	$3
E. R. Howes & Co	San Francisco	Double motion churn	$10
J. B. Jackson	Sacramento	Best washing machine and wringer combined	Diploma and $5
F. T. Houghton	San Francisco	"Little Giant" wringer	Diploma.
W. H. Keep	Stockton	Best well pump	$10
Parker & Hunt	Sacramento	Best apparatus for raising water for irrigating purposes	$20
M. R. Rose	Sacramento	Best steam pump for all work	Special.
M. R. Rose	Sacramento	For improvement on Blake's pump	Diploma.
Matherson & Williamson	Stockton	Horse powers	Diploma.
Treadwell & Co	Sacramento	Portable steam engine	Framed Diploma.
William Lyne	San Francisco	Hair picker	Diploma.
Knapp, Grant & Walton	San Francisco	Horse hoe and weed cutter	Diploma.
William Lyne	San Francisco	Broom scraper for cleaning broom corn	Diploma.
T. B. Lamb	San Francisco	Patent milk cooler	Diploma.
T. B. Lamb	San Francisco	Patent root cutter	Diploma.
Hopkins & Wenson	San Andreas	Vegetable chopper	Diploma.
Linforth, Kellogg & Co	San Francisco	Gerrish submerged pump	Diploma.
G. Schmeiser	Sacramento	Patent wine press	Diploma.
A. A. Flint	Sacramento	Combination draw lock	Diploma.
Treadwell & Co	San Francisco	Grape crusher and stem separator	Diploma.
Waterhouse & Lester	Sacramento	Dold's tenanting machine	Diploma.
John Stockman	Sacramento	Stone drill	Diploma.
A. T. Sprague	San Francisco	Bank vault door	Framed Diploma.
T. C. Churchman	Sacramento	Model snow plow	Diploma.
Wilkie Darling	San Francisco	Nathan & Dryfus' oil cups and cylinder lubricators	Diploma.
John A. Ball	Grass Valley	Elevator for dredging or excavating	Diploma.
William Smith	San Diego	Still and rectifier (model)	Diploma.
J. T. Harrison	Sacramento	Display of brooms	Framed Diploma.
W. Culver	Solano County.	Weight power	Diploma.
John Ross	San Francisco	Boat detaching model	Diploma.

VEHICLES.

Exhibitor.	Residence.	Article.	Premium.
Pollard & Carvill	San Francisco	Fine clarence carriage	First—$50
Pollard & Carvill	San Francisco	Best family carriage	Premium.
Pollard & Carvill	San Francisco	Best top buggy	Premium.
Pollard & Carvill	San Francisco	Best display carriages	Diploma.
Larkin & Co	San Francisco	Best trotting buggy	First—Diploma and $15
Larkin & Co	San Francisco	Best doctor's phaeton	Special premium.
Larkin & Co	San Francisco	Best open buggy	Special premium.
Larkin & Co	San Francisco	Best four-spring family carriage	Special premium.
Larkin & Co	San Francisco	Best display unfinished work	Honorable mention.
E. Soule	Sacramento	Best farm wagon	First—$15
E. Soule	Sacramento	Best wheels and hubs of California locust	$10
E. Soule	Sacramento	Improvem't on thimble skein	Special—Diploma.
James McGinn	San Francisco	Child's hearse	Special—Diploma.
P. Caduc	Sacramento	Imperial carriage	Honorable mention.
James McGuire	Sacramento	Best wheelbarrow	Diploma.
W. H. Devalin	Sacramento	Patent iron wheels	Special—Diploma.
Waterhouse & Lester	Sacramento	Best carriage material, hubs, spokes, etc	Honorable mention.
Copeland & Defrees	Sacramento	Display of farming wagons	Honorable mention.

PLOWS.

Exhibitor.	Residence.	Article.	Premium.
Hill & Knaugh	Marysville	Best sulky two-gang plow	Diploma.
Matterson & Williamson	Stockton	Best two-horse single plow	$10
Matterson & Williamson	Stockton	Best three-gang plow	$20
David Fulton	St. Helena	Best one-horse garden plow	$5
W. Walton	San Francisco	Best single steel plow for general purposes	$10
W. Lyne	San Francisco	Best sidehill plow	$5
W. B. Ready	Sacramento	For two-gang plow	$15
J. Sursea	San Leandro	For ironclad two-gang sulky plow	$15

THIRD DEPARTMENT.

SILK.

Exhibitor.	Residence.	Article.	Premium.
William H. Banter & Co	Napa	Silk cocoons	Honorable mention.
Theodore Lerond	Sacramento	Best exhibition of the silk business, from the mulberry tree to the silk cocoon, including the feeding of the worms, their eggs, etc	$50
Edward Muller	Nevada City	Samples of cocoons	Honorable mention.
John Bradshaw	El Dorado	Samples of cocoons	Honorable mention.
David F. Hall	Los Angeles	Silk cocoons	Honorable mention.
Thomas A. Garry	Los Angeles	Silk cocoons	Honorable mention.
S. Finch	Santa Clara	Silkworms, cocoons, and eggs.	Honorable mention.
Captain Blanding	San Francisco	Bale of reeled silk and cocoons in their natural state	Special—$50
A. Van Vleck	Placerville	Samples of whole and perforated cocoons	Honorable mention.

NEEDLE, SHELL, AND WAX WORK, CLOTHING, HATS, CAPS, FURS, ETC.

Exhibitor.	Residence.	Article.	Premium.
Miss Jennie Marks	Sacramento	Lamp mats	Honorable mention.
Miss Helen Low	Mokelu'ne Hill	Tatting	$3.
Mrs. Goldschmit	Sacramento	Embroidery	$5.
Mrs. M. C. Tilden	Sacramento	Needlework tidy	Honorable mention.
Mrs. T. S. Harris	Sacramento	Under clothing for men and women, and specimens of tatting	Special—Diploma.
Mrs. R. Westlake	Sacramento	Paper bouquet	Special — Honorable mention.
Mrs. Mary Moorehead	Sacramento	Crystalized sea moss, frosted work, etc	Special—Diploma.
Mrs. Boggs	Cache Creek	Crochet quilt	Special—$10.
Miss Agnes Hummell	Sacramento	Variety of mats, cushions, embroidery, etc	Breakfast knife.
Miss Dollie Brown	Sacramento	Stool cover, braided dress, and button charm	Special—Napkin ring.
Mrs. Henry Law	Folsom	Cotton knit stockings, and slipper pattern	Special — Honorable mention.
Philip Phillips	Sacramento	Lace work	$3.
Miss Mary Rosenberg	Sacramento	Crochet tidy, suspenders, daisy, mats, etc	Honorable mention.
Miss Daisy Ryan	Sacramento	Patchwork	Special—Napkin ring.
Miss Jennie Bradley	Sacramento	Patchwork quilt	$5.
Mrs. H. J. Miller	Sacramento	Log cabin quilt	Special — Honorable mention.

NEEDLE AND SHELL WORK, ETC.—Continued.

Exhibitor.	Residence.	Article.	Premium.
Miss Ada Wadsworth	Sacramento	Tatting tidy	Special—Napkin ring.
Mrs. M. Otis	Sacramento	Best display of quilts, spreads, and patchwork, in this class	Framed diploma and $10.
Miss Nellie Pierce	Sacramento	Patchwork	Special—Napkin ring.
Mrs. Sarah Beaumont	Stockton	Knit piano spread, tidies, and collar	Special—cup.
Mrs. General Collins	Sacramento	Patchwork quilt	Special — Honorable mention.
Mrs. J. L. Hummell	Sacramento	Embroidery, etc	Special — Honorable mention.
M. H. Kuhl	Sacramento	Infants' clothing, etc	Special—Diploma.
Mrs. Barrett	Sacramento	Best variety of artificial flowers	$5.
Miss H. M. Brooks	Sacramento	Best specimen of waxwork	$5.
Mrs. J. R. Sturtevant	Sacramento	Wreath of preserved flowers and autumn leaves in wax	Napkin ring.
Mrs. M. E. Stovall	Sacramento	Water color painting	Diploma.
Mrs. M. N. Dingley	Sacramento	Lace pillow, collar, etc	Honorable mention.
Miss J. M. Andran	Sacramento	Hair and feather wreaths	Special — Honorable mention.
Mrs. Arnold Heyman	Sacramento,	Worsted tidy, embroidered smoking cap, and handkerchief box	Honorable mention.
Miss Emma Myers	Amador	Seed and hair wreaths	Special — Honorable mention.
Mrs. M. C. Dufficy	Marysville	Child's dress, infant's hood, etc	Special — Honorable mention.
Mrs. Geo. W. Mowe	Sacramento	Worsted work	Special — Honorable mention.
Mrs. William Yule	Sacramento	Hair wreath	Honorable mention.
Mrs. Joseph Proctor	Sacramento	Wild flowers in wax	Special — Honorable mention.
Mrs. W. H. Devalin	Sacramento	Air castles	Special—Napkin ring.
Miss Landon	Sacramento	Wax fruit	$5.
Miss Mary Sparks	Sacramento	Sofa cushion, worsted work, etc	Honorable mention.
Miss D. Emmons	Sacramento	Case of velvet and lace hats	$10.
Mrs. M. J. Grinnell	Sacramento	Burr picture frames	Special — Honorable mention.
Harry Haskell	Sacramento	Necklace of watermelon seed	Honorable mention.
C. P. Heald	San Francisco	Best specimens of penmanship	Diploma.
P. A. Espina	Sacramento	Penmanship	Diploma.
Landers' Pacific Commercial College	Sacramento	Ornamental penmanship	Diploma.
F. Foster	Sacramento	Best display of blank books and binding	Special—Silver medal.
Hicks & Co	Sacramento	Display of blank books and binding	2d Special—Diploma.
J. C. Meussdorffer	Sacramento	Best silk hat	$5
D. H. Quinn	Sacramento	Best exhibit of men's hats and caps	$5
T. Armstrong	Sacramento	Best exhibit of horse collars	Special—Diploma.
M. D. Saunders	Sacramento	Howard's pat. hame fastener	Honorable mention.
M. F. Barr	Sacramento	Best display of saddle trees	$3
Hiram Cook	Sacramento	Best ladies' saddles	Special.

NEEDLE AND SHELL WORK, ETC.—Continued.

Exhibitor.	Residence.	Article.	Premium.
Hiram Cook	Sacramento	Best farm harness	$10
J. T. Stoll	Sacramento	Best gentlemen's saddles	Special—Diploma.
Hiram Cook	Sacramento	Best set of carriage harness	$10
Hiram Cook	Sacramento	Best display of saddles and bridles	$10
J. E. Parker	Sacramento	Single harness	Diploma.
H. Behrenhardt	San Francisco	Best display of trunks	Special—Diploma.
Samuel Wizinski & Co.	Sacramento	Best exhibit of boy's clothing	$5
A. Gilmore	Sacramento	Best dress boots	$5
S. R. Dodge	Sacramento	Best buck gloves	Special—Diploma.
J. T. Smith	Sonoma	Laboring and riding gloves	Special—Diploma.
James Parsons	Sacramento	Best display of ladies' boots and shoes	Special.
Thomas Beven	Yuba	Cotswold fleeces	Special—Silver medal.
Miss Lou. Nickerson	Lincoln	Crochet tidies	Diploma.
Mrs. C. Cook	San Francisco	Hair work jewelry	Premium.
Mme. Brosse	San Francisco	Dress cutting and patterns	Diploma.
Mrs. W. H. Devalin	Sacramento	Air castles	Diploma.
Samuel Jelly	Sacramento	Silverware	Diploma.
Mrs. J. Rippon	Sacramento	Phantom bouquet	Diploma.
C. H. Marble	Amador	Patent wood collar	Honorable mention.
Isaac P. Allen	Sacramento	Display of perfumery	Honorable mention.
I. L. Merrill	Sacramento	Lamps and oil	Honorable mention.
Oakland Cotton Manufacturing Co.	Oakland	Burlaps	Premium.
Mrs. A. F. Eitel	Sacramento	Bride's dress	Premium.
Henry White	San Francisco	Scrap book	Diploma.
Wm. Sharp	Sacramento	Display of carpets, rugs, etc.	Special—Diploma.

FOURTH DEPARTMENT.

CABINET WARE—CALIFORNIA MANUFACTURE.

Exhibitor.	Residence.	Article.	Premium.
L. Castagnino	San Francisco	Inlaid center tables	Silver medal.
Phelan & Collender	San Francisco	Billiard table	Silver medal.
James Knapp	Sacramento	Best woodwork frame	Honorable mention.
F. Christopher	San Francisco	Chair and stepladder combined	Diploma.
E. Brown	Sacramento	Best invalid's chair	$5.
E. H. Green	Sacramento	Patent spring bed	Special diploma.
John Bruner	Sacramento	Best spring mattrass	Special diploma.
John Bruner	Sacramento	Best dressing bureau	$10.
John Bruner	Sacramento	Best sofa	$10.
John Bruner	Sacramento	Best lounge	$5.
John Bruner	Sacramento	Best extension table	$5.
John Bruner	Sacramento	Best office chair	$5.
John Bruner	Sacramento	Best set of parlor chairs	$10.
John Bruner	Sacramento	Best center table	$5.

CABINET WARE—Continued.

Exhibitor.	Residence.	Article.	Premium.
John Bruner	Sacramento	Best pair of side tables	$5.
John Bruner	Sacramento	Best set of parlor furniture	$20.
John Bruner	Sacramento	Best display of furniture	$20.
John Bruner	Sacramento	Best display of mattrasses	$5.
John Bruner	Sacramento	Best writing desk	$5.
John Bruner	Sacramento	Best book case	$5.
John Bruner	Sacramento	Best wardrobe	$10.
D. L. Moulton	Sacramento	Best school seat and desk	$5.
Alex. Denney	San Francisco	Patent clothes dryer and unhitching shelves	Honorable mention.
Domingos & Esseg	Sacramento	Patent bedstead fastener	Special—Diploma.
W. L. Wright	Vallejo	Bouton & Ames' patent spring bed bottom	Honorable mention.

WOODENWARE.

Exhibitor.	Residence.	Article.	Premium.
Nichols, Falvey & Co	Sacramento	Best display of cedar ware	$5.
Nichols, Falvey & Co	Sacramento	Best display pine ware	$5 and silver medal.

MECHANICAL PRODUCTS.

Exhibitor.	Residence.	Article.	Premium.
N. Clark & Co	Sacramento	Best pottery of various kinds	Silver medal.
N. Clark & Co	Sacramento	Best sample drain tile	$5
N. Clark & Co	Sacramento	Best sample fire-brick	$3
N. Clark & Co	Sacramento	Best sample potter's clay	Diploma.
A. P. Andrews	Sacramento	Best model patent chimney cowl	Diploma.
Van Every & son	Sacramento	Best extension new home-comfort cook stove for coal or wood	$5
F. H. Merrill	Sacramento	Best patent stove collar	Honorable mention.
R. C. Terry & Co	Sacramento	Best improved French range for wood or coal, with boiler, steam ventilator, and hot water attachments complete	$10
R. C. Terry & Co	Sacramento	Best Palace and Richmond portable range for wood or coal, with warm or hot water attachment and roaster complete	Diploma.
Gillig, Mott & Co	Sacramento	Cook stove	Honorable mention.
Gillig, Mott & Co	Sacramento	Fruit can	Honorable mention.
Gillig, Mott & Co	Sacramento	Can tops and bottoms	Honorable mention.
William Friel	San Francisco	American vapor stove	Diploma.

MECHANICAL PRODUCTS—Continued.

Exhibitor.	Residence.	Article.	Premium.
W. H. Earl	Sacramento	Best milk cans	Diploma.
J. C. Hammond	Sacramento	I.X.L. metal	Diploma.
R. C. Terry & Co	Sacramento	Best challenge hot air furnace	$5
R. C. Terry & Co	Sacramento	Best copper, tin, and enameled cooking furniture	$10
R. C. Terry & Co	Sacramento	Best bronzed stand lamps and fixtures	Honorable mention.
F. T. Houghton	San Francisco	Rubins' patent saucepan	Honorable mention.
F. T. Houghton	San Francisco	Ironing holder	Honorable mention.
F. T. Houghton	San Francisco	Patent can opener	Honorable mention.
F. T. Houghton	San Francisco	Kitchen's patent mincing knife	Honorable mention.
L. Sweeny	Sacramento	Best brass goods	Diploma and $20
N. Clark & Co	Sacramento	Best pottery of various kinds	Silver medal.
N. Clark & Co	Sacramento	Best samples of drain tile	$5
N. Clark & Co	Sacramento	Best fire brick	$3
N. Clark & Co	Sacramento	Best potter's clay	Diploma.
L. Wells	Sacramento	Best trotting horseshoe	Honorable mention.
P. J. Phillips & Co	San Francisco	Portable gas burners and lamp	Diploma.
Knowlton & Harris	San Francisco	Best writing ink	Diploma.
P. Donnolly & Co	San Francisco	Best saleratus and best yeast powders	Silver medal.
M. H. Bottgers	Sacramento	Composition snow and salt water grease	Diploma.
F. H. Merrill	Sacramento	California luster	Honorable mention.
Johnston, LaGrange & Co	San José	California wheat starch	Diploma.
H. C. Kirk	Sacramento	Surgical instruments	Diploma.
C. H. Davis	Sacramento	Best case of tools	$10
Justin Gates	Sacramento	Soda fountain with Lisbon marble	Honorable mention.
W. H. Nichols	Folsom	Pruning shears and grape picker combined	Diploma.
W. Gwynn	Sacramento	Kimber's patent porcelain wall finish	Diploma.
J. F. Fugazi	Sacramento	Oriental oil hair dye	Diploma.
Hobson & Ayers	Sacramento	Best sample gas fixtures	Diploma and $10
Hobson & Ayers	Sacramento	Best porcelain washstand, steam heater, plumbers' goods, etc.	Diploma and $10
Hobson & Ayers	Sacramento	For rebronzing old fixtures	Honorable mention.
I. L. Merrill	Sacramento	Lamp ware	Diploma.
Justin Gates	Sacramento	DeBose horse and family liniment	Diploma.
H. C. Kirk & Co	Sacramento	California glue	$5
T. L. Hunt	Los Angeles	Model portable fence	Diploma.
G. J. Exley	Sacramento	Model fence gate	Honorable mention.
D. Flint	Sacramento	Patent farm gate	Diploma.
F. A. Howard	Sutter Creek	Teel's patent fence	Honorable mention.
W. H. Gorrill	Oakland	Smith's patent truss bridge	Honorable mention.
J. T. Harrison	Sacramento	Model patent fence	Honorable mention.
B. Dennery	Sacramento	China ware, Bohemian platio Parian marble and porcelain bouquet	$10
B. Dennery	Sacramento	One twenty-four light glass chandelier	Diploma.
B. Dennery	Sacramento	Portable lamp and lantern—best display	Diploma and $10
Pacific Glass Works	San Francisco	Samples of glass work	Silver medal.
A. J. Kane	San Francisco	Best display fancy soaps	Silver medal.
A. J. Kane	San Francisco	Best display candles	$5
Reed, Hoagland & Newson	San Francisco	Attachment for windows	Diploma.

FIFTH DEPARTMENT.

BRANDIES.

Exhibitor.	Residence.	Article.	Premium.
C. G. Carpenter	Dim'd Springs	Best brandy three years old	$15
Charles Heinrich	Sacramento	Best brandy two years old	$10
J. R. Nickeson	Lincoln	Best brandy one year old	$5
C. G. Carpenter	Dim'd Springs	Best peach brandy	$15
J. R. Nickeson	Lincoln	Best pear brandy	Special—$5
Rock & Wilcox	Sacramento	Best rectified brandy	Diploma.
J. Reny	Sacramento	Best herb bitters	Diploma.
N. Woodward	Napa	Best brandy and wines	Diploma.

WINES.

Exhibitor.	Residence.	Article.	Premium.
George West	Stockton	Best white still wine, four years old	$10
Orleans Hill Vinicultural Society	Sacramento	Best white wine, three years old	$10
Orleans Hill Vinicultural Society	Sacramento	Best white wine, two years old	$10
B. N. Bugbey	Folsom	Best white wine, one year old	$10
Orleans Hill Vinicultural Society	Sacramento	Best red still wine, four years old	$10
Orleans Hill Vinicultural Society	Sacramento	Best port wine	$10
George West	Stockton	Best sherry wine	Diploma.
B. N. Bugbey	Folsom	Best muscatel wine	Special—Diploma.
J. R. Nickeson	Lincoln	Catawba wine	Special—Diploma.
J. R. Nickeson	Lincoln	Isabella wine	Special—Diploma.
J. R. Nickeson	Lincoln	Angelica wine	Special—Diploma.
Frank Ebner	Sacramento	Hock wine	Special—Diploma.
Orleans Hill Vinicultural Society	Sacramento	Reisling wine	Special—Diploma.
J. R. Nickeson	Lincoln	Blackberry wine	Special—Diploma.
George West	Stockton	Frontignac	Special—Diploma.
Orleans Hill Vinicultural Society	Sacramento	Tokay	Special—Diploma.
B. N. Bugbey	Folsom	Wine from Black Prince grape	Special—Diploma.
B. N. Bugbey	Folsom	Sparkling wine, two years old	$10
A. Fink	San Francisco	Sparkling wine, one year old	$10
Charles Heinrich	Sacramento	Wine vinegar	Diploma.
Charles Heinrich	Sacramento	Best white wine, eight years old	Diploma.
Orleans Hill Vinicultural Society	Sacramento	Best white wine, seven years old	Special—Diploma.
B. N. Bugbey	Folsom	Best exhibit of wines from foreign grapes	$20

BUTTER, HONEY. PRESERVED PICKLES, ETC.

Exhibitor.	Residence.	Article.	Premium.
A. T. Cotton	Freeport	Best twenty-five pounds June butter	First—$15
Mrs. E. Ellis	Sacramento	Best ten pounds fresh butter	First—$10
Mrs. E. F. Aiken	Sacramento	Best variety canned fruit	Diploma.
Mrs. E. F. Aiken	Sacramento	Best variety preserved fruit	Diploma.
Mrs. E. F. Aiken	Sacramento	Best wheat bread	$5
Boston Cracker Co.	San Francisco	Best pilot bread	$2
Boston Cracker Co.	San Francisco	Best biscuit	$2
Boston Cracker Co.	San Francisco	Best soda biscuit	$2
Boston Cracker Co.	San Francisco	Best butter biscuit	$2
Boston Cracker Co.	San Francisco	Best sweet biscuit	$2
Boston Cracker Co.	San Francisco	Best Boston biscuit	$2
Mrs. J. P. Odbert	Sacramento	Best variety jelly	Diploma.
Mrs. J. P. Odbert	Sacramento	Best peach jelly	$3
Mrs. E. F. Aiken	Sacramento	Best quince jelly	$3
Mrs. E. F. Aiken	Sacramento	Best apple jelly	$3
Miss Arabella Johnson	Sacramento	Best grape jelly	$3
Mrs. A. S. Morrison	Sacramento	Loaf hop-yeast bread	$2
J. S. Harbison	Sacramento	Hive honey and observatory hive	Special premiums.

SIXTH DEPARTMENT.

WHEAT AND FLOUR.

Exhibitor.	Residence.	Article.	Premium.
R. Threlfall & Bro.	Stanislaus	Best two bushels white Australian wheat	Honorable mention.
Mrs. Peter McGregor	Sacramento	Best Egyptian wheat	Diploma.
T. L. Chamberlain	Lincoln	Best two bushels Australian wheat	First—silver medal.
T. L. Chamberlain	Lincoln	One hundred pounds California flour	Framed diploma.
A. J. Stiner	Yolo County	Sample wheat from fifty-two acres	$10
Pioneer Mills, H. G. Smith & Co	Sacramento	Best Chile wheat	First—$10
R. C. McCreary & Co	Sacramento	Best twenty pounds oat meal	Honorable mention.
R. C. McCreary & Co.	Sacramento	Best twenty pounds cracked wheat	Honorable mention.
R. C. McCreary & Co	Sacramento	Best twenty pounds hominy	Honorable mention.
J. L. Keefer	Sacramento	Best fifty pounds California flour	First—silver medal.

SEEDS, ETC.

Exhibitor.	Residence.	Article.	Premium.
E. F. Aiken	Sacramento	Best sample castor bean	First—$5
D. L. Perkins	Rio Vista	Best sample flax	First—$5
D. L. Perkins	Rio Vista	Best one hundred and forty varieties garden seed	First—$10
C. W. Hoit	Sacramento	Best one hundred pounds sugar beet seed	First—$5
C. W. Hoit	Sacramento	Best fifty pounds muskmelon seed	First—$2
Wm. Crites	Brighton	Best four sacks Ramsdell's Norway oats	First—$5
Wm. Johnson	Richland	Best alfalfa seed	First—$5
A. B. Gilbert	Sacramento	Best yellow Dent corn	First—$5
A. B. Gilbert	Sacramento	Best white Dent corn	First—$5
A. B. Gilbert	Sacramento	Best early field corn	First—$5
Produce Exchange Company	San Francisco	Forty-four samples of wheat, six samples of barley, three samples of oats, one sample of rye, four samples of corn, two samples of flour	Framed Diploma.
W. Hunt	Oakland	Sample surprise oats, one hundred and thirty bushels to the acre	Diploma.

HOPS.

Exhibitor.	Residence.	Article.	Premium.
R. J. Merkley	Sacramento	Best sample hops from ten acres	First—$5

VEGETABLES, ROOTS, ETC.

Exhibitor.	Residence.	Article.	Premium.
P. K. Stewart	Sacramento	Best Walker's rambler cucumber	First—$3
P. K. Stewart	Sacramento	Best garden beans in pod	First—$3
P. K. Stewart	Sacramento	Best turnip blood beet	First—$3
A. B. Gilbert	Sacramento	Best display of vegetables	First—$10
A. B. Gilbert	Sacramento	Largest pumpkin	First—$3
A. B. Gilbert	Sacramento	Best muskmelons	First—$3
Robert Williamson	Sacramento	Best display of sweet corn	$5
Robert Williamson	Sacramento	Best display of onions	$5
Robert Williamson	Sacramento	Best display of beets	$5
Robert Williamson	Sacramento	Best display of peppers	$5
Robert Williamson	Sacramento	Best and greatest variety of vegetables	$50
Robert Williamson	Sacramento	Best display of potatoes	$10
Robert Williamson	Sacramento	Best red onion	$3

VEGETABLES, ROOTS, ETC.—Continued.

Exhibitor.	Residence.	Article.	Premium.
Robert Williamson..	Sacramento.....	Best white button onion.....	 First—$3
Robert Williamson..	Sacramento.....	Best red potatoes.....	$5
Robert Williamson..	Sacramento.....	Best yellow onion.....	$3
Robert Williamson..	Sacramento.....	Best celery.....	$3
Robert Williamson..	Sacramento.....	Best root salsify.....	$3
Robert Williamson..	Sacramento.....	Chickory lettuce.....	$2
Robert Williamson..	Sacramento.....	Best Chinese beans.....	 Premium.
Robert Williamson..	Sacramento.....	Best early Goodrich potatoes	$5
Robert Williamson..	Sacramento.....	Best parsnips.....	$3
Robert Williamson..	Sacramento.....	Best carrots	$3
Robert Williamson..	Sacramento.....	Best peppers.....	$5
Robert Williamson..	Sacramento.....	Best ice cream watermelon...	$3
Robert Williamson..	Sacramento.....	Best lima beans.....	$3
Robert Williamson..	Sacramento.....	Best Hubbard squash.....	$3
Robert Williamson..	Sacramento.....	Best Carolina sweet potatoes..	$5
J. H. Wolfe.....	Sacramento.....	Greatest display melons.....	 First—$10
J. H. Wolfe.....	Sacramento.....	Best green flesh muskmelon..	$3
J. H. Wolfe.....	Sacramento.....	Best sweet corn.....	$3
J. H. Wolfe.....	Sacramento.....	Best mountain sprout watermelon	$3
D. L. Perkins	Rio Vista.....	Best long blood beet.....	 First—$3
D. L. Perkins	Rio Vista.....	Best early rose potatoes.....	$5
C. W. Hoit.....	Sacramento.....	Best Wadsworth sugar beet...	 First—$3
John Smith.....	Sacramento.....	Best display tomatoes.....	 First—$5
John Smith.....	Sacramento.....	Best peck tomatoes.....	$3

FRUITS.

Exhibitor.	Residence.	Article.	Premium.
		Apples.	
A. S. Greenlaw.....	Sacramento.....	Best twelve varieties — best grown and correctly named	$20
E. W. Garvitt.....	Placerville	Best six varieties, correctly named—six specimens of each.....	$10
		Pears.	
C. W. Hoit.....	Sacramento.....	Best twelve varieties — best specimens and correctly named — three specimens each.....	$20
J. R. Nickeson.....	Lincoln	Best six varieties, and best specimens, and six of each, correctly named.....	$10
		Peaches.	
James Creighton.....	El Dorado.....	Best six varieties, and best grown specimens — six of each, correctly named.....	$15
C. G. Carpenter.....	Diamond Sp'gs	Best one variety, twelve specimens.....	$5
		Nectarines.	
E. W. Garvitt.....	Placerville	Greatest number of varieties and best specimens, correctly named.....	$10

FRUITS—Continued.

Exhibitor.	Residence.	Article.	Premium.
		Quinces.	
E. M. Smith	Coloma	Best apple, or orange	$5
		Olives.	
T. K. Stewart	Sacramento	Greatest number of varieties and best specimens	Special—Silver napkin ring.
J. R. Nickeson	Lincoln	Best general display of fruits, embracing best and greatest varieties	$25
		Dried Fruits.	
Mrs. E. F. Aiken	Sacramento	Greatest number of varieties and best specimens, not less than three pounds each	$10
Mrs. E. F. Aiken	Sacramento	Best dried prunes, ten pounds	$10
Mrs. E. F. Aiken	Sacramento	Best twenty-four pounds raisins	$15
Mrs. M. C. Tilden	Sacramento	Finest Bartlett pears	Special.
R. Van Vleck	Placerville	Superior display of pears	$5
O. H. Vinicultural Association	Sacramento	Excellent exhibit of Orleans and Reisling grapes	Special.
R. R. Carrington	Sacramento	Fine exhibit of white Nice grapes	Honorable mention.
J. H. Wilgus	Sacramento	Exhibit of extraordinary cluster of pears	Special.
E. H. Merrill	Colusa	Superior orange cling peaches	Honorable mention.
William Kramps	Diamond Sp'gs	Fine display of fruits	Special—$5
J. Runyon	Sacramento	Fine display of apples	Special—$5
M. Sprague	Sacramento	Fine display of grapes	Special.
		Plums.	
J. S. Bamber	El Dorado	Best six varieties, six specimens each	$10
E. W. Garvitt	Placerville	Best one variety, twelve specimens	$5
		Grapes.	
J. R. Nickeson	Lincoln	Greatest number of varieties and best specimens of foreign grapes, three bunches each	$25
J. S. Bamber	El Dorado	Best one variety, six bunches	$5
E. M. Smith	Coloma	Best one variety for dessert or table use	$5
D. L. Perkins	Sherman Isl'nd	Best one variety for raisins	$5
		Figs.	
J. R. Nickeson	Lincoln	Greatest number of varieties and best specimens	$5
C. W. Hoit	Sacramento	Best one variety, twelve specimens	$3
		Prunes.	
E. M. Smith	Celoma	Greatest number of varieties and the best specimens	$5
J. S. Bamber	El Dorado	Best one variety, twelve specimens	$3
		Oranges.	
T. K. Stewart	Sacramento	Greatest number of varieties and best specimens	$5

FRUITS—Continued.

Exhibitor.	Residence.	Article.	Premium.
		Fruits.	
J. H. Murphy	Sacramento	Exhibits the best plate of Bartlett pears in the hall	Honorable mention.
B. S. Crocker	Placerville	Elegant display of fruits	Silver medal.
J. W. McCall	Placerville	Exhibits of fine grapes	Honorable mention.
Edmund Ellis	Sacramento	Fine black figs	Honorable mention.

SPECIAL PREMIUMS ON FRUITS.

Exhibitor.	Residence.	Article.	Premium.
Mrs. M. C. Tilden	Sacramento	For fine Bartlett pear	Honorable mention.
R. Van Vleck	Placerville	Fine Bartlett pears	Honorable mention.
Orleans Hills Vinicultural Society		Fine display of Orleans and Reisling grapes	Honorable mention.
R. R. Carrington	Sacramento	Fine white Nice grapes	Honorable mention.
J. H. Wilgus	Coloma	Pear clusters	Honorable mention.
E. H. Merrell	Coloma	Superior orange cling peaches	Honorable mention.
William Krump	El Dorado	Fine display of fruits	Silver medal.

SEVENTH DEPARTMENT.

DRAWINGS AND PAINTINGS, ETC.

Exhibitor.	Residence.	Article.	Premium.
D. H. Woods	Sacramento	Best life-size photograph in oil	$25
Howard Campion	Sacramento	Best specimen of portrait painting in oil, by California artist (Senator Lewis)	$25
Norton Bush	San Francisco	Best specimen of landscape painting in oil, by California artist (San Juan River)	$25
Sarah H. Coggins	Sacramento	Best colored photograph	Special—Diploma.
D. H. Woods	Sacramento	Best specimen of fruit painting	$10
Mrs. W. E. Brown	Sacramento	Best flower painting (Dolly's Bouquet)	$10
Mrs. W. E. Brown	Sacramento	Best California landscape in oil, by California artist (Half Dome and Merced River)	$20
D. H. Woods	Sacramento	Best exhibition of painting by any artist	Diploma and $30

DRAWINGS, PAINTINGS, ETC.—Continued.

Exhibitor.	Residence.	Article.	Premium.
S. W. Shaw	San Francisco	Best fancy painting in oil (Fool's Cap)	$10
Mrs. Wm. Yule	Sacramento	Best specimen in water colors (clusters of fruit)	$10
P. Espina	Sacramento	Best pen drawing	$5
J. H. Plath	San Francisco	Best carriage drafts	Special—Diploma.

MUSICAL INSTRUMENTS.

Exhibitor.	Residence.	Article.	Premium.
Jacob Zech	San Francisco	Best grand piano	$20
Jacob Zech	San Francisco	Best square piano	$20
Jacob Zech	San Francisco	Best boudoir piano	$20
J. F. Cooper	Sacramento	Best flute	$5
J. F. Cooper	Sacramento	Best violin	Special.

MARBLE.

Exhibitor.	Residence.	Article.	Premium.
J. C. Devine & Bro.	Sacramento	Best sculpture	$20
J. C. Devine & Bro.	Sacramento	Best collection of marble	$40

FLORAL.

Exhibitor.	Residence.	Article.	Premium.
O'Brien & Dalton		Best floral design and miniature garden	$40
J. Hutchinson	Oakland	Cut flowers	$20

WINTER PREMIUMS FOR 1870.

ARTIFICIAL FOREST CULTURE.

In the Premium List of the State Agricultural Society for eighteen hundred and seventy one a premium of fifty dollars was offered for the largest quantity of useful forest trees planted during the year. At the meeting of the Board of Agriculture, held on the 9th inst., this premium was awarded to James T. Stratton, of Alameda county. There were three applicants for the premium—Mr. Stratton, and E. T. Aiken, and Thomas Edwards, of Sacramento County. The contest was considerably spirited, and has excited a good deal of interest. The subject being new in the State, and of so much general importance, we give below the statement of each applicant made in writing to the Board. They will be found to contain many valuable hints in regard to the cultivation of artificial forests.

Mr. Stratton proved that he had planted during the year, on fifty-three and one half acres of land, in one tract, thirty thousand blue gum trees (*eucalyptus globulus*) and three thousand red gum trees, and that all were in a healthy, growing condition. The following is

MR. STRATTON'S STATEMENT.

The seed from which the above trees were grown was gathered in December, eighteen hundred and sixty-eight, from trees about seven years old, at my own residence, in Brooklyn, Alameda County, and was sown in a frame under glass, on the fifteenth of April, eighteen hundred and sixty-nine, where the plants remained until they were about three inches high—in the middle of June following—when they were transplanted into boxes three feet square, six inches deep, and one hundred in a box. They were well attended to by a careful gardener until November following, when they were carefully cut out, so as to leave attached to each tree a ball of earth three and one half inches square and six inches deep, in which condition they were planted in their permanent location.

The land on which they were planted included a variety of soil, about one half being nearly level, with a stiff, dark loam of good quality, and the other half a heavy adobe, somewhat saline in places and slightly rolling. The whole had been under continuous cultivation, in cereals, during the past seventeen years, and had become somewhat impoverished by continual use. The land was prepared by being plowed in the usual manner, as soon as it had become moistened by the Fall rains, and and the soil was thoroughly pulverized to a depth of fifteen inches, in lines or strips two feet wide and eight feet apart from center to center, in which strips the young trees were planted, in rows eight feet apart each way; the task of planting ending about the first of February, eighteen hundred and seventy.

After they were planted they were well plowed, hoed, and cultivated,

and are now in splendid growing condition, generally about four and one half feet high, although many of them have attained a hight of eight feet.

The expense of the enterprise has thus far been about fifty-five dollars per acre of six hundred and fifty trees, exclusive of the land; and it is expected that they will have cost one hundred and fifty dollars per acre before any revenue can be derived from them, which will probably be in about seven years.

The eucalypti are considered very useful forest trees in Australia, where they are indigenous; the variety *globulus* being used extensively for piling (as they are free from the attacks of the toredo), and for flooring, as it is a beautiful white color and wears perfectly smooth. I have no doubt that it will be found useful for many other purposes.

Mr. Aiken proved that he had planted during the year, and in accordance with the plan set forth in his statement, namely, in nursery form—the rows five and six feet apart, and the trees one foot apart in the rows—the following number of trees of the varieties named:

Lombardy poplar and balm of Gilead, five thousand; morus multicaulis, seven thousand five hundred; morus alba (2), five thousand; California black walnut, ten thousand; American white maple, four thousand; American white elm, five thousand; English elm, two thousand; Spanish chestnut, four hundred; American chestnut, five hundred. All of which were in a good growing condition. Below is

Mr. Aiken's Statement.

In the fifth department of the premium list for eighteen hundred and seventy, entitled "Agricultural Products," the Board of Directors of the California State Agricultural Society have offered a premium of fifty dollars "for the largest quantity of useful forest trees planted during the year."

Here is an industry that is second to none in the whole list of agricultural productions. The rapid disappearance of the forest trees all over our State, especially in localities bordering upon our rivers and sloughs, has for several years excited the attention of all who claim a home in California and feel an interest in the future welfare of our State.

Since the writer became a resident of this county, there was a fine growth of oak and sycamore timber bordering the Sacramento from the city to its mouth, which, it would be safe to say, would yield from one thousand two hundred to two thousand cords of wood for every half mile, on either side. The oak trees were generally straight and handsome; many of them would make two rail cuts of twelve feet each in length, with several cords of wood left in the top. This fine growth of timber which once graced our river, tempered the atmosphere, and gave protection to the adjoining plains from the sweeping winds, has entirely disappeared—the woodchopper's axe has stripped the river farms of nearly all the hard wood timber, and the owners are now obliged to rely upon the growth of willows for firewood. One of the greatest disadvantages which the farmers of our plain lands labor under is the want of timber lands and forest trees. There is nothing to protect the growing grain, the young vineyards, or the newly planted orchard from the fierce northerly winds which visit us almost periodically, and generally

come at a most critical time for the farmer, and in two days time blow his hope of a good harvest for the season into despair.

These evils can be easily avoided and at the same time a supply of timber secured to every farmer, and in a much shorter time, too, than many would believe possible, by planting suitable trees in nursery form in different places or plantations on the farm, where they may be carefully cultivated for the first two or three years, when they may be properly thinned out and those removed planted in belts, always taking care that they run in such direction as to afford the best shelter to crops from the prevailing winds. Trees planted in this manner, and kept thoroughly cultivated and well mulched, will make a fine growth and require no irrigation. Mulching and cultivation are better than irrigation. This mode of cultivation has a tendency to encourage the roots to run deep, seeking a moist soil, and giving the trees a hold upon the earth that will prevent their being blown down. It has been demonstrated that nothing is required but an effort on the part of our farmers, skillfully directed, to grow many kinds of our most valuable forest trees on our dry plains, and it would be money well invested for all our agricultural societies to offer liberal premiums for the best and most extensive tree plantations. What better or more enduring monument than can be erected in living tree characters on our prairie farms? The managers of our agricultural societies should encourage the good work by liberal premiums. Make the good work popular, and our winds and plain wastes will soon be conquered.

The following is

MR. EDWARDS' STATEMENT.

I planted seven thousand locust trees last year and this—three thousand five hundred each year—for which I claim the society's premium. I have them set out in alternate rows, eight and ten feet apart, and four feet distant in the rows. I raised the trees from seeds I got in the neighborhood.

To germinate the seeds I put them in warm water, covered them, and set them by the stove for about a week, until they got started; then I set them out in nursery form for one or two years before they were set out in the artificial forest. The forest is on high land, about three miles south of Sacramento. I have plowed between the rows four times each year. The first I set out did remarkably well this year; and those of this year's planting are all alive, except two or three per cent. I will state here that the land had not been cropped for a number of years before the trees were set out. I think the expenses will be about fifteen dollars or twenty dollars a year; but I expect to get some firewood from it before the end of ten years, by trimming and thinning out.

I hope the society will excuse me for not bringing in a sample. In about ten years I think I shall have fence posts enough to fence my own land and some to spare for my neighbors.

The Board awarded the premium to Mr. Stratton, on the ground that their offer of a premium for forest trees planted during the year contemplated that the trees should be planted permanently where the forest was to grow, and not in a nursery from which the trees were to be taken and sold from year to year, as demand for them could be found. While they would encourage the laudable efforts of Mr. Aiken to introduce the growth of shade and forest trees in all parts of the State, and especially, as is suggested, on the plains, and in belts, so as to form wind breaks or

screens, and shelter the growing crops, they could not divert the premium offered for a special purpose from the claimant who had fulfilled the conditions contemplated. The Board did not express an opinion as to the proper distance trees for a forest should be planted. They leave this question to the judgment and experience of the cultivators, only requiring that the trees should be planted for permanent growth. The same premium is continued for eighteen hundred and seventy-one.

RAMIE.

First Statement of John S. Finch.

Hayward's, Alameda County, October 20, 1870.

Robert Beck, Esq., *Secretary State Board of Agriculture:*

Dear Sir: This will acknowledge the receipt of yours of eighteenth instant, and I hasten to answer your interrogatories seriatim, as follows:

First—In answer to "What have you done in raising ramie?" I have imported from the State of Louisiana ramie cuttings in sufficient quantities to plant above two acres of land, in advance, as I believe, of all other cultivators, to develop and advance our agricultural importance as a State, and the producing capabilities of our soil and people.

Second—"How much land have you planted in ramie?" In answer, I would say, a fraction over two (2) acres.

Third—"What is the cost per acre?" I answer, the ramie plants sufficient to plant one acre cost me, at the time I imported, two hundred dollars ($200), and for cultivating the same, six dollars ($6) per acre.

Fourth—"How much will an acre produce?" In answer, an acre will produce, according to my own experience and calculation, nine hundred and sixty (960) pounds of long, bleached fiber at one cutting, sample of which I send in envelop marked number one, valued at two dollars ($2) per pound. Envelop number two contains the fiber in a state for spinning (as sent to me from L. W. Wright, of Brooklyn, New York), value four dollars ($4) per pound.

Fifth—"What is your experience in raising and preparing the ramie?" In answer, I find it adapted to the soil and climate of California; not prejudiced by insects or other enemies; hardy, tough, and a vigorous grower, and soon to take precedence of all other textile fibers. My experience in preparing the ramie has been necessarily confined to what I required to show its fiber; but I am told by professional spinners and bleachers that fibre number one can be produced for six cents per pound.

All of which is respectfully submitted,

And I remain yours, with consideration,

JOHN S. FINCH.

RAMIE.

SECOND STATEMENT OF JOHN S. FINCH.

HAYWARD'S, Alameda County, December 28th, 1870.

ROBERT BECK, ESQ.:

Dear Sir: In accordance with the requirements of the State Agricultural Society of which you are Secretary, I herein submit, briefly, the following statement regarding the growth, cultivation, and value of the "ramie plant," for premium:

First—"As to the next previous crop," I would say that according to my calculation per acre, the crop would realize nine hundred and sixty (960) pounds of *long bleached fiber* at one cutting, and after the first year, the growth of the plant will admit of three cuttings, according to the experience of growers in the Southern States, which in the aggregate would yield per acre a crop of two thousand eight hundred and eighty (2,880) pounds, at the gross value of five thousand seven hundred and sixty ($5,760) dollars, calculated at two dollars per pound, when its estimated value is as high as three dollars per pound.

Second—"The kind and condition of the soil." My ground is a heavy, sandy loam, plowed twice, and not Summer fallowed. It is my judgment that in a fine, light, rich alluvial deposit soil, properly cultivated, the thriftiness of the plant growth is greatly enhanced, and in my judgment it is well adapted to any character of soil fitted for the successful growth of the cereals.

Third—"The expense of planting and harvesting." Ramie plants sufficient for an acre, at present prices, cost two hundred ($200) dollars per acre; and for cultivating the same, say six dollars per acre; and harvesting, say two dollars and fifty cents per acre. The value of the crop has been estimated approximately in the first interrogatory. In general terms, the prospective value of the ramie cultivation to California is beyond computation. So valuable is its fiber as a textile fabric material, admitting of admixture with silk or cotton goods, thus lending strength, beauty, and fineness which has not been attained by any other known material. It easily accommodates itself to our dry Summers, is thrifty in its growth, easily laid down, and hardy in its nature. Time, with proper machinery, and plenty of the raw material, will ultimately render it the most valuable manufacturing material grown; then in all truth it may be said that "Ramie is king." One other advantage attending its cultivation, and of great moment, is, that it is a continuous grower, perennial in its life, and needs but one planting. All of which is respectfully submitted.

JOHN S. FINCH.

STATE OF CALIFORNIA, }
County of Alameda. } ss.

John S. Finch, being duly sworn, deposes and says: That he raised a crop of ramie the last past season upon two acres of land measured by P. S. Moore, and that the statement annexed, subscribed by this deponent, as to the manner of cultivation, expenses, etc., is in all respects

true, to the best of his knowledge and belief, and that the sample of ramie is a fair sample of the whole crop for which I claim premium.

J. S. FINCH.

Subscribed and sworn to before me this twenty-fourth day of December, A. D. eighteen hundred and seventy.

JOSEPH GRAHAM,
Justice of the Peace.

Award.—The premium of twenty-five dollars was awarded to Mr. Finch.

CORN.

Statement of crops grown by A. B. Gilbert, on the American River, in Brighton Township. The quality of the soil is sandy loam. The manner of cultivating for corn: first, plow about eight inches deep; second, plant the corn in hills about three feet eight inches apart; third, cultivate with cultivators and hoes, and suckered or thinned when two thirds grown; fourth, cost of plowing and cultivating ten acres, two hundred and ten dollars; fifth, value of crop raised on ten acres, four hundred and thirty-six dollars and sixty cents; profit, two hundred and twenty-six dollars and sixty cents.

State of California, }
County of Sacramento. } ss.

I, A. B. Gilbert, being duly sworn, say upon my oath that the foregoing is a correct statement of crop raised by me in said county.

A. B. GILBERT.

Subscribed and sworn to before me, January 27th, 1871.

WILLIAM ELLIS,
Justice of the Peace.

Award.—The premium of thirty dollars was awarded Mr. Gilbert.

HOPS.

To the Honorable the Board of Directors of the California State Agricultural Society:

The undersigned, R. J. Merkley, of Sacramento County, herein makes application for and claims the premium of twenty-five dollars offered by your society in the fifth department, class second, of the premium list of the California State Agricultural Society for eighteen hundred and

seventy, for "best crop of hops, not less than ten acres nor less than two thousand five hundred pounds per acre;" and in support of said claim presents the following statement and affidavit:

First—For statement of the next previous crop, and how measured, your Honorable Board is referred to my statement of eighteen hundred and sixty-nine, on file in the office of your Secretary.

Second—The soil upon which the field of hops was raised for which I claim the premium as above, is a sandy loam, intermixed with a very little clay, if any at all, and cultivated in the usual way of cultivation for the production of hops, being plowed and harrowed so as not to permit weeds to grow.

Third—The expense of cultivating, picking, and curing has been about seven and a half cents per pound, and the value of the crop is about twelve and a half cents per pound.

Fourth—I raised two thousand six hundred and fifty pounds per acre—making the whole crop of ten acres twenty-six thousand five hundred pounds. The profit of which, from the above statement of expense and value, is about one thousand three hundred and twenty-five dollars.

Fifth—The land upon which said crop was raised is in one contiguous piece, measured by myself, and contains ten acres.

R. J. MERKLEY.

STATE OF CALIFORNIA, }
County of Sacramento. } ss.

R. J. Merkley, being duly sworn, deposes and says: That he has raised crop of hops the last past season, upon ten acres of land measured by himself, and that the quantity of hops was two thousand six hundred and fifty pounds per acre, and that the statement hereto annexed, subscribed by this deponent, as to the manner of cultivation, expenses, etc., is in all respects true, to the best of his knowledge and belief, and that the sample of hops herewith presented is a fair sample of the whole crop for which he claims a premium.

R. J. MERKLEY.

Subscribed and sworn to before me, this twenty-sixth day of January, A. D. eighteen hundred and seventy-one.

A. COMTE, JR.,
Notary Public.

The premium of twenty-five dollars was awarded to Mr. Merkley.

WHEAT.

ROBERT BECK, ESQ., *Secretary California State Agricultural Society:*

I hereby make application for the premium of fifty dollars, given by the above Society for "best crop of wheat, not less than fifty bushels per acre," and append the following statement:

First—The previous crop was not measured, and no special account taken of it.

Second—The soil is sandy loam, was Summer fallowed, in good condition, and well broken up. It was sowed between the twentieth and thirtieth of October, eighteen hundred and sixty-nine, and then cultivated in. There was sown seventy-one pounds of Club seed per acre.

Third—It costs about three dollars to Summer fallow and sow the same, and about five dollars per acre to harvest, and three dollars and thirteen cents per acre to sack, and seventy-five cents per acre to haul to market. Total cost to deliver to market, eleven dollars and eighty-eight cents per acre.

Fourth—A sample of the above was on exhibition at the last annual meeting of the Society.

The crop was raised on a parcel of land measuring twenty-two acres, one hundred and forty-four rods, and six links, and is part of the north-east quarter of Section One, Range One east, Township Nine, and situated about two and one half miles southwest from the Town of Woodland, County of Yolo.

State of California, }
Yolo County. }

Adam Steiner, being duly sworn, deposes and says: That he raised a crop of wheat the last past season upon twenty-two acres, one hundred and forty-four rods, and six links of land, surveyed and measured by —— Donnovan, a surveyor of the Town of Woodland, County of Yolo, and that the quantity of grain was (3,159) three thousand one hundred and fifty-nine pounds per acre; and that the statement annexed, subscribed by this deponent, as to the manner of cultivation, expenses, etc., is in all respects true to the best of his knowledge and belief, and that the sample of wheat sent is a fair sample of the whole crop for which he claims premium.

ADAM J. STEINER.

Subscribed and sworn to before me, this sixth day of December, A. D. 1870.

ELIAS PETERSON,
Justice of the Peace.

The premium of fifty dollars was awarded Mr. Steiner.

CLAIMS FOR THE GOLD MEDAL FOR 1870.

FIRST DEPARTMENT.

STATEMENT OF JOHN HALL, OF ALAMEDA.

To the Committee to award Gold Medals in the First Department:

GENTLEMEN: I will state that I think I am entitled to the gold medal in this department on my exhibition of fine thoroughbred horses.

My entire exhibition embraced thirteen head, twelve of which were thoroughbred and one graded. Woodburn, Peggy Ringgold, and Moss Rose were imported by me from Kentucky, where they were considered as good blood as was to be had in the United States. The blood of Woodburn is not surpassed in the world. The balance of the stock exhibited by me are of my own raising in this State, and are all by Woodburn, except one two year old, which is by Norfolk. Take my lot of horses as exhibited by me at the Fair, and ask the opinions of competent and impartial judges, and I am satisfied they will pronounce it the finest lot of horses ever exhibited by one man at any Fair in California, and will compare well with any stock of horses in any country.

I received eight premiums at the late Fair of the Bay District Society and seven at the Fair of the Santa Clara Valley Agricultural Society. At the latter place I was awarded a premium on every animal I exhibited.

Hoping your committee will give the matter a careful consideration, I am most respectfully,

Yours, etc., JOHN HALL.

STATEMENT OF G. N. SWEZY, OF YUBA.

Gentlemen of the Committee on Gold Medals:

I submit to you that in your department the rearing of cattle is of more importance to the State than that of horses or sheep. Sheep will only afford us mutton and wool, the horse his service, while cattle will not only afford us our principal meats, but leather, milk, butter, and cheese, and service as well. It would be hard to do without beef, milk, butter, and cheese, while we might do without the sheep and horse, as silk, cotton, and other textiles would supply us with our principal

clothing in so favorable a climate, and the ox and mule be a fair substitute, with steamboats, railroads, steam plows, and threshers, for the service of the horse.

Again, the principal portion of the land of this State is high and dry plain land and foothills. This land is our best grain and wine land. This land, now so productive, will, in a few years devoted to successive cropping, become impoverished unless fertilized. We cannot fertilize with either timothy, clover, buckwheat, or other crops turned under, as in other countries, because the land is too dry to grow these. We then must depend upon the barnyard for fertilizers; and all our straw and hay must be consumed and converted there into manure and returned to the land. The straw left upon the land, or burned, as is the custom, will not enrich the land in so dry and burning a climate. It must go into the barnyard and there be used as food, bedding, and shelter for cattle, and receive and absorb the moisture of the cattle's droppings and ammonia of their urine, and be tramped and converted into useful and enriching fertilizers. This can only be done profitably by cattle, as the milk, butter, cheese, and increased weight of beef will profitably repay all the labor and care bestowed, to say nothing about the profit the farmer will realize from his manures as fertilizers to his other productions. To farm successfully the farmer must diversify his productions; and what interest can he so profitably carry on with the raising of grain as the rearing of cattle. It will be but a short time before the grain farmer will find the rearing of cattle indispensable to his successfully raising profitable crops of grain. I will not be tedious. You have enough to gather my idea.

I contend that my exhibition of full blooded Durham cattle, and of crosses between blooded Durham and blooded Ayrshire cattle, was the most meritorious exhibition, and one that would be greatly more for the interest of the State than any other cattle exhibition made at the State Fair. My blooded Durhams or shorthorns have perfect pedigrees. I exhibited five, and their records will be found in my name in volume five of the *American Herd Book*, page three hundred and twenty-two, and volume nine, first part, pages forty-five, one hundred and seventy-three, three hundred and ninety-five, and four hundred and fifty-three; second part, pages six hundred and ninety-six and nine hundred and fifty-nine. My old cow, Kate Dunne, is of the pure Teesewater milch stock; so is her heifer Beauty, and yearling First Duke of Yuba. Beauty took the sweepstakes, and has taken the premium every year of her life in her class, and two sweepstakes this year, being the only times shown. The First Duke of Yuba has always taken the premium in his class. He has been shown four times and taken four premiums and one sweepstakes. These all have size, weight, beauty, symmetry, and are good for beef or milk and butter; indeed, cannot be beaten. The first Duke of San Mateo is a fine animal—large, well built, and of exceeding weight for his age, two years. I believe there is no better animal standing than he is. He comes from the celebrated Bates & Booth's Duchess Durham, with a pure pedigree. His great grandsire and granddam are from the most celebrated bull in England, Vanguard, of pure milch stock. That strain of milk alone is worth thousands to have it introduced into this State. My other cattle exhibited are a cross of two milk strains, the milking Durhams and Ayrshire. These animals are symmetrically and finely made, of good size and form and weight, and the best of milkers and butter makers. I keep them for milkers. They make beau-

tiful cows; are small boned, though large, and are pictures in a pasture field or the barnyard; and fatten readily when dry, and yield in beef almost equal to the Durham.

As to Colonel Younger's exhibition, I have nothing to say, as I do not know the quality of his animals, and know nothing of their bloods, as I have not been able to find his or his animals' names in the Herd Book. I think either of our exhibitions superior to the Devons. I have not found them even in the Devon Herd book. You see by these last remarks I rely a great deal upon pedigree and purity of blood, so does your society. I have reason for so doing. We should always breed so as to improve our stock; this we cannot surely and successfully do without pure blooded animals. The cold blood will often cry back. The rule is to infuse superior strains and not tainted or inferior strains of blood into your herd. If possible the male should always be superior to the female; if so, the get will always be superior to the dam; if not, it will be inferior, and so we go back. Again, if there is a bad strain of blood in the male it may show itself way back to a remote scrub of an ancestor. In all cases it will and does weaken and neutralize the better strain and quality you desire most to propagate and preserve. So for the welfare of the State one pure blooded animal that will transmit its valuable properties is worth more than a whole herd of animals of impure blood, or without well established useful qualities of milk and beef. My animals are all kind and gentle, and by nature quiet and docile, good feeders, and in no way breachy. I have never had a bull or cow, old or young, leave my inclosure, though my fences are but the most ordinary; this trait, all who have purchased of me, give my animals. I submit the above, regretting that I have not time to give more attention to the subject.

Yours respectfully, etc., G. N. SWEZY.

STATEMENT OF W. T. WILSON, OF OREGON.

To the Committee of Gold Medal Awards on Stock, at the annual exhibition of the State Agricultural Society, held in Sacramento, September, eighteen hundred and seventy:

GENTLEMEN: Having made entry for the society's gold medal for stock exhibited at the fair grounds, I submit the following reasons why I compete for and claim the prize:

The value and profit of sheep raising is greater to California than that of any other kind of stock. As a growing industry its magnitude and importance is second to none else; and it is limited alone, prospectively, to the amount of pasturage and feed that can be economically produced for the range and feeding of such stock.

Less expense of care, labor, and food is required for sheep than is the case with any other stock that will equal the income; while but little outlay of money will start one in the business of sheep raising.

The rapid increase of sheep by breeding is too well known to require argument.

Mutton is fast taking the place of beef. It can be afforded at a less cost, and still allow a better profit to the producer. It is fast gaining in favor among learned men and consumers of meat; and it is quite

generally conceded to be as palatable, nutritious, and health giving as beef or any other meat. While beef is often forced upon the market in a condition hardly fit for consumption, good wholesome mutton is always obtainable at a lower figure.

The value of the wool clip in this State is an item worthy of high consideration. It is better than mines of gold, which simply represent values. It is a product that builds up factories, encourages home industry, and clothes the people substantially.

Although wool is one of our most valuable exports, it is but natural to predict that we will soon make it up into clothing for ourselves and the world, instead of selling our wool and buying our clothing. In a practical and economic light, clothing made from our fresh clipped fleece is worth one hundred per cent more than the sea-heated imported materials.

Home industry receives a direct encouragement from sheep raising that is yielded by no other class of stock, and as the breeds are improved farmers with a few acres will find it convenient and profitable to keep a few choice sheep. The introduction and encouragement of large, superior wool and mutton sheep will do away with the prevailing notion that thousands of acres of wild lands are necessary to profitable sheep raising.

As sheep are cheaply and easily kept, are more profitable, are of greater material value—including meat, wool, and industrial encouragement to this State—than any other stock, I see every reason why the gold medal should be awarded to sheep. The profits of horse raising, aside from horse racing, etc.—which is of very questionable importance—are quite small. More might be said in favor of cattle. But of the great and growing importance of sheep there can be no question.

My claims consist in the fact that I have exhibited the best specimens of the best variety of sheep—the Cotswolds—all of pure breed. These sixty-two sheep I have imported directly from Gloucestershire, England, the native country and home of this breed of sheep. These were selected and purchased of Mr. W. Lane, one of the most distinguished sheep breeders in England; and I confidently assert that no finer breed of sheep were ever brought to the United States. For size of carcass, excellence of wool, purity of breed and general excellence I assert they have no superiors.

Late prizes in England.—Among the twenty-two bucks and forty ewes shown by me at this Fair in Sacramento are four ewes, four years old, that took a first prize at the Lynneester cattle show last May; also one buck, "Lord Bathwell," took the first prize at the same show. I claim that there is not one ordinary or inferior sheep in the whole collection which I exhibit, and that no man can make, or has made a better showing of pure blooded Cotswold sheep in this country.

Habits of the Cotswolds.—They are strong and hardy and easily domesticated, making the best of mothers. They are quiet, not given to wild roving, but will be content on sparse pasturage; but they are full eaters and upon good feed will fatten quickly; they will thrive where restless sheep will grow poor.

The Cotswold wool is a long staple, the most valued by our manufactures—being easily combed and worked, lustrous, and best for staple goods. It brings the highest price in market, and the sheep yield quite as much again to the yearly fleece as the same number of Merinos. The Cotswolds are taking the place of Merinos as fast as they are brought in direct comparison and competition. The Cotswolds are the

favorites of all long wooled sheep; they produce more wool and longer wool than any other breed.

The Cotswolds for mutton are the most profitable sort of sheep known. There is a blending of fat and lean, and a juciness of meat altogether superior, while the weight will exceed any other sort.

In conclusion, I respectfully submit to your judgment the facts as stated. I might quote a mass of authority for every satement submitted, but prefer to leave the subject as presented to your intelligence.

One statement more which I overlooked: for crossing with other breeds, the Cotswolds are admitted by all good breeders of sheep to be superior to any other variety.

This enterprise is one calculated to be of vast and permanent value to this coast, and I claim some credit for this importation. I shall expect the gold medal for making the best exhibit of the best breed of sheep made at the State Fair this year—the most valuable show of stock.

Respectfully, W. T. WILSON.

SECOND DEPARTMENT.

STATEMENT OF LINFORTH, KELLOGG & CO., OF SAN FRANCISCO.

To the Gold Medal Committee:

GENTLEMEN: We claim the gold medal for the "World" mower and mower and reaper combined, because it is the most perfect machinery of its kind made. Unlike all other reapers and mowers, the gearing is cast blank, like this cut. It is accurately bored, then placed in the lathe and turned down to a standard size, which is unvarying as the finest calculation and skill can make it. From the lathe it comes in the shape shown in this cut, excepting that there is no tooth (the artist having introduced this to show its relation to the general surface of the blank), and is perfect in all its proportions, every part of it having been subjected to the most accurate measurement. From the lathe, the blank passes to the gear cutter, upon which the cogs are cut with faultless precision and the pinion delivered in the shape shown in this illustration. Nothing in mechanism can excel the exactness with which these gear cutters (models of ponderous elegance) do their work. They (the gear cutters) were invented and built expressly for this purpose, at a cost of two hundred and fifty thousand dollars, and are the wonder and praise of all who see them. They have been made to do work perfectly by a process which the best mechanical talent of the country had pronounced impracticable—all previous attempts having failed. Thus, from the character of the machinery and mechanical ability employed in its construction, you can judge of the mechanical excellencies of the "World" mower and reaper and mower. Every wheel and cog is made by the same process and with equal care. The blanks are cast as perfectly as any other casting, turned down to a standard gauge, bored with equal precision, and the cogs cut so faultlessly that one does not differ in the

smallest degree from another. The iron used is of the best quality, chiefly "Hanging Rock coal blast charcoal pig," better than which cannot anywhere be found, and the equal of which is rarely used in agricultural machinery. The shafting is made of iron of the best quality, and, like the gearing which it is to carry, prepared with the greatest care. It is turned throughout its length like that of the best grades of machinery, and fitted to the wheels with such exactness that there cannot be the slightest vibration. It is key-seated, as are the wheels, by machinery, so that when the two are fitted together they are substantially one.

Having secured perfect gearing in the manner indicated, the next important matter is to give it fixed relations. These are secured in the "World" first by means of a solid cast iron case frame into which the bearings for the shafting are moulded. These bearings, with their caps, are babbitted with metal of the finest quality, a jig representing the shafting being used to locate and regulate the proportion of the bearing precisely. We cannot here explain the necessity for the use of the jig further than that it is an invention of comparatively recent date, and is the only means by which the bearings can be so nicely adjusted as that all the undue friction (causing heating and rapid wear), so common in ordinary machinery, can be obviated. Second: the bolt holes, instead of being formed with a core and cast as commonly done, are bored through the solid iron, their size and location being fixed with faultless exactness. A slight elevation surrounding the bolt holes, through both frame and caps, is planed, so that the surface against which the bolt-head and nut are brought is perfectly smooth. A circular countersink is cut into the pillar block, and a stool, corresponding in form and size precisely with it, is cut upon the cap (the bolt hole passing through the center of both) by which means the position of the cap cannot be changed when drawn down to its place, no matter how great the strain in any direction. This device, peculiar to the "World," is one of special excellence, and its importance cannot be overestimated—indeed, cannot be appreciated by any one not familiar with the fact that to keep box caps firmly in place is a prime necessity.

The bolts, like those of the locomotive and the class of machinery to which it belongs, are turned throughout their length and made to fit so tightly into their holes that considerable force is required to drive them to their places. The thread is cut upon the lathe (not squeezed out as is commonly the case), the under side of the head faced smoothly, so that coming in contact with the planed surface of the case, as already described, the bearing is perfect. The nut, cold pressed and like the head of the bolt hexagon shaped, is faced up, and the thread cut on the lathe and coming in contact with the elevated and planed surface of the cap, makes a fit which, with the permanency of the bolt cap, sufficiently accounts for the fact that no nut or bolt has ever been known to come loose. Every wheel, shaft, bolt, and nut being perfect in itself, accurately adjusted, each in its relation to the other, and secured with unchangeable permanency, the movement of the whole construction is as easy, noiseless, and smooth as that of the locomotive or engine lathe. Protection to the gearing, the importance of which is apparent, is secured completely by means of a hinged cover, which with the solid iron case or frame excludes water, sand, grass, and indeed every kind of dirt which could in any way hinder the movements or cause wear to the vitals of the machine.

The durability of the "World" can only be determined by a comparison of it with the machinery built in the same manner to be used for other purposes. The engine lathe, which is in no point superior to it (the same material and mechanism being common to both), after constant use during an average of ten (10) hours each working day for twenty (20) years, and shows little, if any, indication of wear. There can be no reason why the "World" should not last and do its work an equal length of time, and the proof of this is apparent in every machine yet built, the testimony of those who have used it since its introducion being to the effect that "there is not the least evidence of wear in any part of the gearing." The same causes which insure its durability equally establish its freedom from liability to derangement. The importance of this to the farmer, who with a full force of hands employed at high wages, is depending upon his machine for the prompt dispatch of the harvest work and the security of his crops, is too manifest to be discussed. Of the "World," one who has thoroughly tried it says: "It worked like a charm, and there was no hindrance in the way of tinkering, not even for a moment."

The mowing bar of the "World" is made of cold rolled iron of the best quality, it having been clearly demonstrated that it best answers the purpose. The knife is greatly strengthened and improved. The heel (made of steel and planed down so as to secure easy movement), extends with a gradual taper out upon the knife, thus insuring perfect safety to both, whatever may be the shocks or resistance the latter may meet.

The guards are of iron of the best brands, forged by regular "guard makers," instead of being cast or malleable, as is commonly the case with many other machines. The inside is lined with cast steel, then ground so that a sharp edge is presented on both sides, and the keen and highly tempered knife vibrating rapidly through them, the grass, however tangled, wet, heavy, or dry, is mown so easily and smoothly that, as an enthusiastic admirer says: "It is solid pleasure to see it work." The guards are highly polished, so that they offer nothing to which wet grass can cling.

The rolling motion of the bar enables it to follow and adapt itself to the undulations of the surface over which it is cutting, thus making a stubble of uniform length and clean work anywhere. This is further facilitated by the drag bar, which, like the runner of the "Yankee Jumper," carries the bar and knife down into and over ditches and dead furrows, and insures its safe passage over obstacles of every kind without jar or danger of breakage.

The parallel movement, an arrangement peculiar to the "World," by which the knife and pitman are kept perfectly in line (no matter how low the bar may sink or how high it may be lifted), thus preventing any binding or strain upon either, is a point of acknowledged and superior merit.

The ball and socket pitman joint provides for every twist and strain to which the pitman is liable, thus securing an uncramped movement while allowing the bar perfect freedom to adapt itself to the surface, however rough or rolling may be the ground.

The lifting arrangement is a simple lever and chain, so adjusted that the cutter bar can be raised to and by means of a pawl and ratchet, conveniently located and under easy control, kept at any hight desired to clear stumps or other formidable obstacles. The purchase is such that very slight effort is used to handle it.

We do not wish to consume the time of the committee, but are anxious to have them understand all the points of superiority we claim for the "World." It is emphatically the machine for this coast, and if we receive such encouragement from your committee as we think we are entitled to, *i. e.*, the gold medal, it will be a great inducement for us to make the effort to have the machine manufactured here, because it is so peculiarly adapted to this coast where the dust and sand soon cut away and wear out machines that are not protected by being completely covered in an almost water tight case, as is the "World." It seems to us that we are entitled to the gold medal over all other competitors, for the most useful, perfect, and complete machine yet made. It stands without a rival.

Your decision (if favorable, as we think it ought to be and will be), may be the means of starting the manufacture of this kind of machinery here, which ought to be done, we all know, and so add another interest to our material prosperity on this coast.

Yours respectfully, LINFORTH, KELLOGG & CO.

STATEMENT OF WILLIAM SAWDON.

To the Gold Medal Committee:

I submit to you my claims for the gold medal, which I trust will meet with attention and careful investigation.

The Californian Sewing Machine is the first that ever was invented on the Pacific Coast, and also the first ever manufactured in the State of California. It is one of the cheapest and most durable. There is no difficult movements in it, and is easily managed, and not liable to get out of order, like others. It works easily, and with very little noise. It will sew the finest muslin, or the strongest cloth or leather; and by a simple arrangement the thread is passed from the spool to the needle without having a hole to thread. It will do all the different kinds of work, such as hemming, braiding, tucking, felling, etc., and is equal in every respect to any imported machine. It is also an important item in Californian manufacture. Thousands of dollars have been sent to the East for machines which can be kept at home; besides, it will furnish employment to molders, machinists, carpenters, etc.

Those claims I submit for consideration, etc.

Yours, respectfully, WM. SAWDON.

STATEMENT OF ERRICK LUNDQUEST, OF GRASS VALLEY.

To the Gold Medal Committee:

The claims of the undersigned for award of the gold medal for the watchmaking lathe are based on the following grounds:

The machine is entirely new and different from any now in use, and having for its design the enabling of watchmakers to construct or repair any part of a watch, excepting the main and hair springs and dial, with-

out involving the trouble and expense of procuring a separate machine for every different part of a watch to be constructed or repaired.

The machine is a combination of machines, all in one, and by it a workman can make a correct duplicate of any part of a watch that can possibly get broke, including the cases, by a quicker, easier, and more correct method.

It is a valuable invention, not only to watchmakers but to machinists in general, who can apply its principles to their calling with ease and profit.

To bring this machine to perfection has cost an immense amount of labor and study.

It is a California invention, and well worthy the attention of every watchmaker and machinist for the accuracy of the work which its use will insure, as well as for its great labor-saving qualities.

I am perfectly willing that it should undergo any amount of further examination, and will cheerfully give a complete personal explanation of all its parts.

Respectfully, ERRICK LUNDQUEST.

STATEMENT OF POLLARD & CARVILL, OF SAN FRANCISCO.

To the Gold Medal Committee:

GENTLEMEN: We lay claim to the State Agricultural Society's gold medal in our department. We had on exhibition six vehicles: one Clarence, one family carriage, three top buggies, and one open buggy. We claim that our display showed better work than ever was exhibited at any Fair, and most certainly a larger and better than was on the list at the last meeting of the Society. All of the work exhibited by us was of our own manufacture, the work, even to the bending of the rounded lights in the beautiful Clarence, being done in our shop.

Yours respectfully, POLLARD & CARVILL.

STATEMENT OF C. H. HUBBARD, OF SACRAMENTO.

To the Gold Medal Committee:

I would most respectfully ask of the Board or the committee who are to award the gold medal for the most meritorious exhibit of California manufactured and invented machinery, to consider my claim for the same. I ask for the medal offered to this department, basing my application on the Price's Patent Hay Press, which is purely a California invention, and all of California manufacture. It is a press that has proven to be better than any other manufactured in the United States. In California, where hay baling is one of the most necessary branches of agriculture, it has driven all other kinds of presses out of market. Its reputation here cannot be doubted, as many of them are now in use, and all who have used them are ready to certify that this press is much better than any other they have ever seen. The inventor is now about to introduce it into the

Eastern States; heretofore his capital has not been large enough to do it. I claim for this invention a press upon entire new principles, combining strength, rapidity, and compactness never before obtained in a press. A full description of the working of the press would require too much of your time. (A description will be given if requested.) Being an invention which is of great benefit to the agricultural portion of the State, and purely of California invention and manufacture, I think it well worthy of your consideration; and if the committee who are to award this medal will give my application their consideration, I think they will agree that this press was the most meritorious invention exhibited in that department.

I am, yours most respectfully, C. H. HUBBARD.

THIRD DEPARTMENT.

STATEMENT OF HIRAM COOK, OF SACRAMENTO.

To the Committee to Award Gold Medals:

GENTLEMEN: The undersigned, in accordance with the regulations of your honorable Society, herewith very respectfully submits his claims for award of gold medal for the third department.

I base my claims as follows:

First—Your Committee on Premiums have awarded me first premium on the best carriage harness, best farm harness, best ladies' saddle, best display of riding bridles; also, best assortment of saddlery on exhibition at the State Fair in eighteen hundred and seventy.

Second—The above articles were manufactured in Sacramento, where I have been manufacturing harness, saddles, and everything in the above line for the last eighteen years.

Third—I am using California leather only, and employing a large number of hands in the manufacturing of harness, saddlery, collars, whips, lashes, etc. I therefore claim your honorable consideration.

Respectfully, HIRAM COOK.

STATEMENT OF JOHN S. FINCH, OF HAYWARD'S.

To the Board of Award of Gold Medals:

GENTLEMEN: Herewith please find a stalk and the rough fiber of ramie plant, which I have entered in competition for the gold medal premium as a new and valuable product grown in the County of Alameda and State of California.

Its general merits, though lately introduced in this country, are becoming generally acknowledged, and as it is likely to effect a great revolution in the manufacture of fibrous fabrics, it is of the utmost importance that a knowledge of its great intrinsic value be universally diffused.

I claim to be the pioneer introducer and cultivator of the ramie plant in California. I claim for the ramie plant a superiority over every known fiber in use in strength, durability, texture, and cost. I claim for it that it is susceptible of culture in almost any soil; that as an exotic it becomes readily acclimated; that it is cheap to produce it; that it is easily cultivated; that it has fewer enemies in its growth than other fibers; that neither drought nor wet weather will injure it; that it propagates rapidly; that it produces largely; that it commands high prices; that a ready market invites general production; that it opens up a new channel of industry that will revolutionize the material interests of the State; that its introduction generally will develop new industries among our people by which employment will be furnished for thousands of laborers who will make their homes among us; that it will furnish the means by which manufactories will spring up; that but little capital is required in its production; that it is as strong as hemp, as flexible as flax, and can be made as fine and firm as silk; that it furnishes a material in which the poor can afford to be finely clad; that the plant itself is healthy and vigorous, and that its leaves are susceptible of being manufactured into paper of excellent quality.

These and other reasons specially set forth in the accompanying pamphlets are a few, and only a few, of the reasons I urge in favor of this plant so justly celebrated, and afford the reasons upon which I claim the award of the gold medal premium.

With these statements I take pleasure in handing you specimens of the plant referred to, as well as of the rough fiber.

Very respectfully yours, JOHN S. FINCH.

STATEMENT OF JAMES PARSONS, OF SACRAMENTO.

To the Gold Medal Committee:

GENTLEMEN: I claim the gold medal premium for the following reasons:

First—The styles of gaiters, shoes, and balmorals which I exhibited at the State Fair of eighteen hundred and seventy were all of California manufacture, and more elegant than any of the same class ever imported or made in this State, not excepting those from the best Eastern and European markets.

Second—For workmanship and beautiful finish I claim they are superior in every respect to any ever imported, and certainly far ahead of any ever exhibited or manufactured in this State.

Third—This branch of home industry, which I represented at the late State Fair, with proper encouragement, will save millions of dollars that annually leave this State for the East and Europe. I hope the committee will, therefore, award me the gold medal.

Respectfully yours, JAMES PARSONS.

STATEMENT OF H. M. BROOKS, OF SACRAMENTO.

To the Gold Medal Committee:

My application for award of a gold medal for exhibition at the last

State Fair is based on the art of successfully imitating nature in wax work.

Respectfully, H. M. BROOKS.

STATEMENT OF MRS. C. COOK, OF SAN FRANCISCO.

To the Gold Medal Committee:

It having been desired that I should submit some of the reasons why the gold medal of my class should be awarded to me, I will state that I have, for at least seven years, made the best display of hair braids and fine device and landscape hair work of any one on this coast. This has been allowed by the press and also by experts and critics. The articles I exhibit are home manufacture. I therefore say, with full confidence, that my manufacture is the means of keeping a much larger amount of capital in the State than many larger ones of other characters, and I trust will not receive a less degree of encouragement than I received in the Eastern States before making California my home, more especially as since that time I have made important improvements every year, and should you appreciate my efforts sufficiently to encourage me, I propose to make a still better display next year. It is my intention to show the entire process of manufacture, which will be very interesting and very attractive; this you will understand will benefit your institute and the State. I also intend to display two excellent workstands of my own invention. They work well and easy, raising and lowering the braids as desired, and being, I think, as near perfect for the purpose intended as possible. Trusting that you will give my application for the gold medal of my class a favorable consideration,

I am your obedient servant, C. COOK.

STATEMENT OF F. FOSTER, OF SACRAMENTO.

To the Gold Medal Committee for eighteen hundred and seventy:

Gentlemen: Permit me to present to you the statement of my claim to the gold medal for the most meritorious exhibition in the third department, including textile fabrics, mill, and other manufactures.

My exhibition consisted of samples of bookbinding, embracing blank books in every style for general and special purposes, also printed books in all varieties of cover, and finished in all the various styles of workmanship. The regular committee in this department awarded to my exhibition a silver medal, being the highest premium paid to any exhibitor in the department. This award was made for the superior excellence of the exhibition itself, and may be considered as a special recommendation for the gold medal, to the extent that that committee had the means of judging. But as I am informed that your committee may, in their discretion, and probably will, take into consideration all legitimate circumstances connected with the claimant's business that may tend to add merit to the exhibition, I venture to call your attention to the following facts: Mine is the oldest bookbinding establishment on the

Pacific Coast. It was commenced in eighteen hundred and fifty-five, and has been in constant operation from that day to the present time. Like the pioneers in all other manufacturing industries on this coast, I have met with many discouragements, and have labored under many disadvantages. Not the least among these has been the sharp competition of imported ready-made work, especially in the line of blank books of every description. While eastern establishments work upon the plan of a division of labor, each devoting its attention to only one special class of work, the peculiar isolated condition of our State has been such that, in order to secure work enough to keep my hands employed, I have been compelled at great expense to provide machinery and skilled labor for the accomplishment of all varieties of work, performed in other countries in several establishments. The high price of labor and material here in early days was almost a complete bar to the success of my enterprise; but having once engaged in it, I determined to persevere as long as I could make it afford a livelihood. Even now I am unable to compete with importers of blank books for general purposes, but am compelled to depend for patronage upon those who require work of a special character, and can appreciate work of high merit, and are able and willing to pay for it—such as banks, large mercantile establishments, State and county offices, etc. A large portion of my exhibition was work of this character, made to order. The material used in my establishment, such as paper, leather, thread, glue, cloth, etc., was formerly all imported, but I have always made it a rule to purchase homemade articles whenever I could find them; and I am happy to say that most of these materials are now being manufactured here, and by giving encouragement to my enterprise by awarding to me the gold medal, your committee will also be indirectly encouraging the manufacture of all the materials used by me.

I could draw comparisons between my exhibition and those of other parties in competition with me, but do not consider it necessary, or perhaps proper to do so, as the committee are abundantly able to do that for themselves. I will only say that next to the "art preservative" mine may be classed as important, as its direct tendency is to preserve in a neat and convenient form for the use of mankind the best thoughts of our best and ablest men.

All of which is most respectfully submitted in faith and hope.

F. FOSTER.

FOURTH DEPARTMENT.

STATEMENT OF ISAAC P. ALLEN, OF SACRAMENTO.

To the Gold Medal Committee:

The reasons why we should have a gold medal awarded us for display during your last exhibition are, first, that there was no display of like goods that at all approached our display in magnificence, taste in arranging, and quality of articles. They were all manufactured in the United States. They equal if not surpass French goods of the same class, and they are noted the world over for magnificence and "keeping" qualities.

Secondly, it added a great deal of cheerfulness to the part of the Pavilion in which it was placed. This was remarked by many. In fact, I might say that it was *the* feature of the new part of the Pavilion. Trusting that the above reasons may be evidence enough to your committee of our just claim to the award asked for,

We are, yours truly, ISAAC P. ALLEN & CO.

STATEMENT OF JOHN BREUNER, OF SACRAMENTO.

To the Gold Medal Committee:

The reason why the gold medal premium should be awarded to me on the articles mentioned herein is:

HOME MANUFACTORY.—One Turkey lounge, one sick chair, one walnut high dining chair, two walnut embroidered ladies' chairs, one walnut parlor suit (seven pieces), one California laurel parlor suit (seven pieces), one attorney's office desk, with revolving desk, book shelves of walnut and laurel; one office rotary chair, two bedroom chairs, one rocking chair, one walnut hat rack, one towel rack, one spring mattress, one hair mattress.

Any good mechanic must acknowledge that the articles mentioned are the best of workmanship, and cannot be excelled; and it was the best display ever exhibited in this State.

Very respectfully, JOHN BREUNER.

STATEMENT OF R. C. TERRY & CO., OF SACRAMENTO.

To the Honorable Committee for Awarding the Gold Medal at the State Fair of eighteen hundred and seventy:

Our reasons for claiming the medal are that we believe we had the best and most meritorious display in the fourth department of home (or domestic) manufacture, added to our goods partly and wholly manufactured abroad.

Our French ranges, broilers, copper boilers, and copper furniture are California manufacture, mostly of our own make, and our display of stoves and heaters, mounted and partly manufactured by us. In short, we claim that we exhibited more home manufactured goods than any other party in this department.

Very truly and respectfully yours, R. C. TERRY & Co.

STATEMENT OF THE PACIFIC INK FACTORY, OF SAN FRANCISCO.

ROB'T BECK, ESQ., *Secretary California State Agricultural Society:*

DEAR SIR: In answer to yours of the twenty-third ultimo, requiring us, "as competitors for the gold medal premium, in the fourth department, to file with you a written statement, giving our reasons why the gold medal should be awarded us," we beg leave to say:

First—We claim that our inks, mucilage, and liquid blueing are superior to any imported.

Second—The *Alta*, in eighteen hundred and sixty-nine, estimated that upwards of one million of dollars per annum was sent out of the State to pay for imported inks alone, all of which we expect to stop within the next twelve months, by furnishing a better article at less price.

Third—We expect not only to supply the region heretofore supplied from San Francisco, but shall shortly commence exporting to the Southern and Western States; and as we are enabled to manufacture inks here cheaper than they can be manufactured in New York and Boston, we have no doubt but their exportation will be profitable to us and advantageous to the State.

Fourth—The inks imported into this market come from New York, Boston, Philadelphia, London, Paris, and Berlin; there are no other ink manufactories of any note, in the world, other than those named, and the establishment here, upon the shores of the Pacific, of an ink factory, supplying the world with inks superior to any other, should be a source of pride to Californians, and the Managers of the State Fair are in duty bound to do all in their power to bring about this great desideratum.

Fifth—Our establishment, directly and indirectly, gives employment to a large number of men. Our bills, for printing labels alone, amounting to some two hundred dollars per month, and continually on the increase.

Sixth—The announcement in the public newspapers, that the California State Fair had awarded us the gold medal, would give our manufactures a status abroad that would be of great pecuniary advantage to us and of permanent benefit to the State.

Hoping that your committee will examine the matter thoroughly, and conclude that our manufactures, being of great importance to the State, and as we have never before applied for or received a medal, and that as the advancement of a home industry is the enrichment of our whole people, will, in your good judgment, award us the medal,

We remain, your most obedient, KNOWLTON & HARRIS.

STATEMENT OF NICHOLS, FALVY & CO., OF SACRAMENTO.

To the Gold Medal Committee of eighteen hundred and seventy:

GENTLEMEN: We enter our claim for the gold medal in the fourth department, and think that we are entitled to it for the following reasons: that our goods (pails, tubs, and woodenware), being entirely and exclusively of home manufacture, are entitled to and deserving of more credit

than any other display in the same department; that ours is an industry which, if properly fostered and encouraged, will grow to be of great extent, keeping money in the State that would otherwise go out of it; that although there may have been more brilliant displays in this department than ours, there were none of goods that required so large an outlay of capital and time to produce them. Hoping the committee will acknowledge the justness of our claim, we remain, gentlemen,

Your obedient servants, NICHOLS, FALVY & CO.

STATEMENT OF HUNTINGTON, HOPKINS & CO., OF SACRAMENTO.

To the Committee for Awarding the Gold Medal Premium:

Gentlemen: As competitors for the gold medal premium, we claim that it should be awarded to us for making the largest and most meritorious display of goods in the fourth department, having on exhibition a full and complete assortment of hardware, house furnishing goods, and railway supplies, comprising between nineteen hundred and two thousand different pieces, and valued at six thousand five hundred dollars.

Yours truly, HUNTINGTON, HOPKINS & CO.

FIFTH DEPARTMENT.

STATEMENT OF THE SACRAMENTO VALLEY BEET SUGAR COMPANY, OF SACRAMENTO.

To the Gold Medal Committee of the State Agricultural Society for the year eighteen hundred and seventy:

Gentlemen: The Sacramento Valley Beet Sugar Company was organized in March, eighteen hundred and sixty-eight, for the purpose of purchasing lands, raising beets, and manufacturing beet sugar. The company was duly incorporated April twenty-fourth, eighteen hundred and sixty-eight, with a capital of one hundred thousand dollars, and all its capital stock was subscribed by citizens of Sacramento.

An agent was sent by the company to Europe in May, eighteen hundred and sixty-eight, who was authorized to proceed, at the expense of the company, and examine into and report upon the condition of beet sugar manufacture. This agent was absent several months, visiting the most important sugar districts of Germany and France. On his return he made a lengthy report to the company, which was published and gratuitously distributed among those interested in beet culture and sugar manufacture.

In the meanwhile, a tract of land of about three hundred and sixty acres was purchased near the City of Sacramento, and immediate steps were taken to procure seed from Europe suitable for the production of

sugar bearing beets. A quantity of the seed was planted, and with the beets grown therefrom the first beet sugar ever made in California was produced in the factory of the Sacramento Valley Beet Sugar Company, and a sample thereof exhibited at the Fair of the State Agricultural Society in the year eighteen hundred and seventy.

During this year, some sixty acres of beets were planted on the ground of this company, and in June steps were taken to get machinery in operation in time to make sugar when the beet crop was fully matured. There was, however, considerable delay in getting the machinery, and before it could be finished and put up in complete working order, the beet crop had commenced a second growth, and they had lost a large proportion of their sugar properties. The result has been that the percentage of yield in sugar has not been so satisfactory as could be desired and as was expected while the beets were growing.

The company are making preparations for sowing a large breadth of land the coming season, and are confident of producing results that will be satisfactory to the stockholders, and be the means of establishing an industry in California of the utmost importance. These facts are submitted to your committee, and we solicit at your hands the bestowal of the gold medal offered by the State Agricultural Society for the most important exhibit in the department to which beet sugar belongs. We ask for this gold medal upon the following grounds:

First—The Sacramento Valley Beet Sugar Company was the first company to organize in the State for the manufacture of beet sugar.

Second—This company has been expending large amounts to get the best information available in this country and Europe, and have made experiments in beet culture in California, the results of which will be of great importance to those who prosecute the business hereafter.

Third—This company are the pioneers in an industry that is destined to become one of vast importance to California, and in which a large amount of capital will eventually be invested.

All of which is respectfully submitted.

W. E. BROWN,
President of the Sacramento Valley Beet Sugar Company.

SUPPLEMENTAL STATEMENT.

GENTLEMEN: We have been making several practical tests in the matter of making sugar from beets grown upon our lands near Brighton. The results convince us that the second growth which the beets have taken within the last six weeks has very materially reduced the quantity of sugar contained in them. In the manufacture of some thousand pounds of sugar we find that the yield of sugar and syrup has been but about eight per cent of the beets used, the same being weighed after the shank or waste was trimmed off. As but about sixty per cent of this result would be sugar, it will be seen that the yield of sugar would be but four to five per cent of the weight of trimmed beets; whereas, with proper cultivation, they should yield at least eight per cent of sugar.

Some portions of our machinery are capable of running through thirty tons of beets in twenty-four hours, and if we should increase the other portions to an equal capacity, and had beets that would yield eight per cent of sugar, we should undoubtedly arrive at results something like the following:

EXPENSES.	
Thirty tons of beets, at five dollars per ton	$150 00
Six cords of wood for engine, at three dollars	18 00
Thirty-one Chinamen, at eighty cents per day	24 80
Eight men for boiling, etc., at two dollars per day	16 00
Three engineers, eight hours each, at three dollars per day	9 00
Team work, etc	13 00
Bone black, etc	15 00
Superintendent	7 00
Reboiling syrup	20 00
	$272 80

CONTRA.	
Sixty thousand pounds beets yielding eight per cent of sugar would be forty-eight hundred pounds, at eight cents	$384 00
Sale of beet clippings, for feed, six tons, at two dollars and a half	15 00
	$399 00

RECAPITULATION.	
Yield of one day's work	$399 00
Cost of production	272 80
	$126 20

This result would give a net profit of $126 20 per day, without estimating the value of the syrup produced, or of the large quantity of pulp left after the beets are worked through the centrifugals.

All of which is respectfully submitted.

W. E. BROWN,
President S. V. B. S. Company.

STATEMENT OF ROBERT WILLIAMSON, OF SACRAMENTO.

To the Board of Judges of the State Agricultural Fair for the year eighteen hundred and seventy:

GENTLEMEN: As a competitor for the gold medal in the fifth department, I claim—

First—That the articles exhibited by me are among the actual necessities of life, and also among the chief products of the country, and form a very important part of our agricultural and commercial interests.

Second—I claim to have exhibited a greater variety of products than any one exhibitor in said department.

Very respectfully, ROBERT WILLIAMSON.

STATEMENT OF ORLEANS HILL VINICULTURAL ASSOCIATION, OF SACRAMENTO.

To the Committee on Gold Medals:

GENTLEMEN: The history of grape culture and the manufacture of wine is too well known and written up to require comment from us. The benefits to the country and to this State are well understood by you. You are well aware of the fact, that we have in this State thousands of acres of land of but little value for any other purpose, and yet when put under cultivation in the grape are rendered of equal, if not greater value than any other lands, even the best wheat and orchard lands. In twenty years from this time this industry will, in our opinion, if properly encouraged, be of greater value to the State than any other. The Orleans Hill Vinicultural Association are fostering this industry to their utmost ability, and this fact we urge as a reason why we are entitled to the gold medal in this department. We also claim the medal for the reason that we have this year exhibited at the State Fair the greatest variety of uniformly good wines, and obtained for them the greatest number of premiums and special awards. We therefore ask at your hands the gold medal for wines.

Respectfully,

ORLEANS HILL VINICULTURAL ASSOCIATION,

By CARL STROBEL, Secretary.

STATEMENT OF B. N. BUGBEY.

To the Committee State Agricultural Society awarding Department Gold Medals:

GENTLEMEN: The undersigned, an exhibitor in the late State Fair at Sacramento, claims the award of the gold medal in the fifth department, for the following reasons:

First—That wines and brandies are the most valuable and important in the list of articles competing for the gold medal in this department, the value of the product of grapes being the third leading agricultural product of the State; also, that it is more important to foster the wine producing interest than any other in the fifth department of the late State Fair, as giving greater employment and increased value to land and labor than any other in proportion to the capital invested.

Second—That the undersigned, as an exhibitor, has made the largest and more valuable exhibit of wines and brandies produced from foreign varieties of grapes—all of excellent flavor; thereby showing conclusively the capacity of our soil and climate to produce successfully the finer wines of France, Germany, Spain, and other wine countries of Europe. This result has been effected through great care and expense, extending over a period of nearly ten years, and is destined to have an important and favorable influence in competing with the finer varieties of wines which have heretofore been imported from Europe. The under-

signed claims that he has produced as fine qualities of wines from the different varieties of grapes used as can be had—age and other circumstances considered—anywhere, and that the result thus attained he has made the common property of all other viniculturists in the State.

I am yours, truly, BENJ. N. BUGBEY,
Per H. D. D.

SIXTH DEPARTMENT.

STATEMENT OF T. K. STEWART, OF SACRAMENTO.

To the Committee on Gold Medals, at the Fair of eighteen hundred and seventy:

Gentlemen: As an applicant for the gold medal, to be awarded by your committee for the most meritorious exhibition in the sixth department, I beg leave to submit to you the following facts for your consideration: I came into the State in eighteen hundred and forty-eight, and in the following November I settled where I now live, on the American river, within the present limits of Sacramento. Having brought with me a supply of garden seeds of various kinds, and apple seed, pear seed, and peach pits, etc., to the amount of about two hundred pounds, I planted them all in the following Spring, and in the Summer of eighteen hundred and forty-nine succeeded in producing a very fair crop of nearly every variety of vegetables; such as corn, beans, beets, potatoes, peas, melons, etc. I also planted the peach pits, apple and pear seeds, all of which came up well; but during the warm, dry season, not having any facilities for irrigation, and not knowing much of the peculiarities of the climate, a large number were killed by the drought; I succeeded, however, in keeping alive and raising some half dozen pear and apple trees, and a dozen peach trees. I also, the same Spring, planted a few fig and olive trees, and succeeded in raising one of each. At the late State Fair I exhibited from these trees, now over twenty years old, apples, pears, figs, and olives. As early as eighteen hundred and fifty-one, desirous of testing the question, whether the climate was adapted to the successful production and maturing of oranges, I obtained some orange seed and planted them, and the sweet oranges exhibited by me at the Fair were from the trees then planted. Finding, from this early beginning, that the climate was favorable to the growth of the various kinds of fruit trees, I was encouraged to extend my experiments in this direction, and in eighteen hundred and fifty-five, with a view to supply myself with the stock necessary for a more extensive orchard, I planted out a nursery of about one acre in extent, and embracing nearly all the varieties of the most useful fruits now produced in the State. From this nursery I supplied many of my neighbors with trees for a beginning in the fruit business, reserving for my own use a sufficient number to plant some twenty acres, which is the size of my present orchard and vineyard, and which is in a good bearing condition.

My exhibition at the Fair embraced a large number of varieties of apples, pears, plums, oranges, figs, grapes, and olives. For oranges and

olives I received respectively the first premiums. In fact, my exhibition contained all of these excellent fruits at the Fair, and for this reason I claim special merit, and trust the committee will appreciate my efforts to show the adaptability of the soil and climate of this part of the State to their cultivation. I also claim for my exhibition special merit on the ground of my early beginning in this important industry and the many early experiments made by me at a time when the minds of nearly all the people of California were turned toward the mines, and agricultural and horticultural pursuits were considered of but little account. While others were digging out the precious metals, to be shipped from the State in payment for the agricultural and horticultural products of other countries imported, I was thus early laying the foundation of an industry which was in time to check the export of gold from the State and develop her most valuable and lasting resources. It is true that my commencement was small and seemingly insignificant, but all great and valuable enterprises have their small beginnings, and should be measured and adjudged by their results. My experiments and efforts have been continuous from the Spring of eighteen hundred and forty-nine, when my seed were planted, to the present time; and while from my location the floods have done me much damage and thus retarded my operations and prevented their extension, so that some others who commenced at a later day have larger orchards and more extensive establishments, still they have all had the advantages afforded them by my pioneer experiments. From this small beginning fruit culture in this portion of the State has continued to develop, until it is now becoming one of the most important industries of the country. If the committee, in making up their decision, take into consideration the risks run and obstacles met and to be overcome by the pioneers in new and untried fields of industry, as I think they should, then I trust that my exhibition is at least entitled to a fair share of consideration, and I shall hope to receive the award of the gold medal for the sixth department.

Very respectfully, your obedient servant,

THOMAS K. STEWART.

STATEMENT OF J. R. NICKESON, OF PLACER COUNTY.

To the Committee on Gold Medals for eighteen hundred and seventy:

GENTLEMEN: In coming before you as an applicant for the gold medal in the sixth department, I desire in the first place to state that I shall presume that in determining the degree of merit to which an exhibition is entitled, you will not only look at the exhibition itself, but will take into consideration any and all relevant circumstances tending to affect that question either for or against the exhibitor. My statement will be made upon this presumption, and I hope the exhibition may be judged of accordingly.

I will premise then by saying that since the existence of the State Agricultural Society I have been one of its constant, and I may in truth say, one of its principal supporters. Whatever has tended to increase its interest, or extend its influence and usefulness, has been a subject of lively interest with me, and has received my active and substantial support. So constant have been my exhibitions at the Fairs of the society

that the officers have come to regard an exhibition from me as certain as the Fair itself, and in fact I would almost as soon think of omitting to gather my annual crops as to exhibit samples of them at the Fairs of the State Society. If all the farmers of this State were to take, or had taken in the past, the same degree of interest in the society, how different would have been her position to-day, and how much more extensive and important would have been the agricultural industries of the State.

My exhibition this year was but a repetition of those made by me each year for ten years past, and embraced the following number of varieties of the different kinds of fruit: of grapes, two hundred and fifty-five varieties; of apples, two hundred and seventy-six varieties; of pears, eighty varieties; of peaches, thirty-five varieties; of plums, twenty-five varieties; of figs, eight varieties; of English walnuts, one variety; of almonds, one; of pomegranates, one; and of quinces, eight varieties; making in all seven hundred and twenty varieties of fruits exhibited by me. And I here state as a fact, that my exhibition of fruit embraced a greater quantity, and a greater number of varieties, than all other exhibitions combined. It gives me pain instead of pleasure that such is the fact, for it tells too emphatically of the negligence and indifference existing among the fruit growers of California with reference to an industry of such vital importance.

In addition to the above exhibition of green fruits, I exhibited dried fruits as follows: one variety of raisins; five varieties of figs; five of prunes; three of peaches; one of nectarines; one of pears; and eight of plums. I am sorry to be compelled to state that in this branch of the fruit exhibition, mine embraced more varieties than those of all other exhibitors. Too much cannot be said or done to induce our fruit growers to enter into the business of drying fruit. Thousands of bushels of every variety of fruits go to waste annually that might be made to net a handsome profit to the producers if they would take the trouble to dry them; and the wages of the labor necessary to perform this work would contribute to the comfort and happiness of thousands of needy families. I make it a point in the management of my orchards and vineyards to allow nothing to go to waste that will pay for the labor necessary to take care of it; and my object in exhibiting dried fruits, was to wake up an interest in this particular department of fruit culture, and try and save to our State annually a large income which, under the present management, is entirely lost.

Besides the above exhibition of fruits, green and dried, I had at the Fair eighteen distinct varieties or samples of wine, and one of brandy. These, although not fruit, are the result or product of fruit, and may well be taken into consideration in making a decision on the merit of an exhibition. I will state for the convenience of the committee that I was awarded for my exhibition the two highest premiums offered in the sixth department, viz: "For the best general display of fruits, embracing best and greatest varieties, twenty-five dollars." Also for "greatest number of varieties and best specimens of foreign grapes, three bunches each, twenty-five dollars." I was also awarded the first premium for the greatest number and varieties and best specimens of figs, five dollars," being more than was awarded to any other exhibitor in the same department. This award alone, being made by a competent and critical committee, should be decisive as to the merit of the exhibitions.

There are, however, other considerations which tend to invest my

exhibition with more than ordinary interest, and which may contribute to its merit. The first of these is found in the great number of varieties of the different kinds of fruit exhibited. There are in fact but a few varieties of fruits, comparatively speaking, profitable to cultivate in California. My object in producing so many varieties has been to determine the best varieties for my own benefit. My object in exhibiting them was to give others and the public at large the benefit of my experience. To produce so many varieties for the purpose above named has cost me a large amount of money, and the benefits accruing are as much the property of others as of myself. Again, the location of my place is in the foothills of the Sierra Nevada Mountains, and my success in that locality goes to show that those foothills are as well if not better adapted to the cultivation of all the varieties of fruit and wines than any portion of the valleys of the State. There are thousands of locations in these foothills just as favorable for entering into the fruit and wine business as my own, and the land can be had at the government price. The tendency and object of my exhibition is to call attention to these facts, and thus to benefit the State and the people who may be induced to take advantage of them.

With these considerations I beg leave to place my claim in your hands, and abide the result.

Respectfully, J. R. NICKESON.

STATEMENT OF E. F. AIKEN, OF SACRAMENTO.

To the Committee on Awards of the Gold Medals:

GENTLEMEN: The object of the Directors of the Agricultural Society in offering gold medals for the most meritorious exhibit in the different departments is without doubt to encourage and stimulate those interested in the several departments to such productions and manufactures at home as will eventually put a stop to the immense drain of coin from the State to pay for articles imported, thereby keeping our coin at home and creating new industries, which will give employment to hundreds and thousands now coming to our State from the East.

Mrs. Aiken respectfully presents her claim for the gold medal in the sixth department, in behalf of an interest destined to be one of the most important of the agricultural interests of the State, viz: dried fruits, prunes and raisins. These interests were honorably represented by Mrs. Aiken at the late Fair, the committee awarding her five premiums and two diplomas for the exhibit of fruits and raisins; the raisins and prunes receiving especial mention as being equal if not superior to the imported articles.

Many of the best varieties of fruits in the Atlantic States are gradually but surely decreasing in quantity and quality. The best varieties of cherry trees throughout the Eastern and Middle States are being rapidly decimated by a disease called the "black knot," and the cultivation of plums and prunes is almost discontinued on account of the curculio; these insects often destroying every plum and nectarine on the trees. No remedy has yet been discovered that has proved effectual. California, thus far, has escaped the ravages of insects and diseases peculiar to the Atlantic States, and with her incomparable climate, combined

with the skill and industry of her horticulturists, is proving, beyond a question, to be one of the best fruit growing countries in the world. The area of our territory is such that we have a diversified climate, which enables us to produce fruits of all climes worthy of cultivation, from the apple and pear of our Northern homes to the orange, the lime, and the olive of the tropics.

The quality of our fruits cannot be excelled; and they are now being produced throughout our State in such quantities as to far more than equal home consumption. Our fruit raisers are beginning to realize that we have a climate with peculiar advantages for drying fruits and making raisins, and have already demonstrated that this industry can be made a paying one to themselves, and of immense value to the State.

The process of making raisins and prunes is simple. The prunes are picked when fully matured, and exposed to the sun (spread on boards or tables prepared for the purpose) for several days, turning occasionally; and when dried sufficiently they are taken and dipped in water to moisten them. They are then placed in a hot oven on shallow pans for a few minutes, until thoroughly heated, to start the sugar in them. They are then spread again to cool, and when cool and dry are ready to be packed down for market. Raisins are made in a similar manner, with the exception that they require no fire heat.

For want of proper statistics I am unable to state the amount of money paid annually for dried fruits and raisins imported into the State; but it will be safe to say that we are paying more than a million and a half of dollars to other countries for what we have in abundance within our own boundaries. How much better, then, for the interests of our fruit growers, and the State at large, when we can produce enough of the above mentioned articles to meet the call for home consumption, thereby retaining at home the immense sums of money sent abroad annually to pay those who do supply the demand. This state of things cannot remain so long. We shall soon be able to supply the whole Pacific Coast with all varieties of dried fruits, and have a large surplus to export to the Atlantic States.

The foregoing statement of this new interest among us (which, without doubt, is justly entitled to the gold medal) is most respectfully submitted for your consideration.

ED. F. AIKEN.

SEVENTH DEPARTMENT.

STATEMENT OF JACOB ZECH, OF SAN FRANCISCO.

To the Gold Medal Committee:

In compliance with requirement of exhibitors to file written statement of claim, I beg to submit the following reasons for claiming a gold medal in the seventh department—fine arts:

First—My pianos are entirely of California manufacture, are of superior workmanship, are fully as good, if not superior in tone and finish, to any imported pianos, and are unqualifiedly superior to the imported

article, in having all the woodwork preserved against the trying influences of this climate by the injection into the pores of the wood of the vapors of hydro-carbon oils.

Second—I have since the first commencement of my manufacturing here, in eighteen hundred and fifty-six, made and sold five hundred and sixty pianos, all a California production. The enterprise is beset with bitter competition from importers and agents of Eastern and European manufactures, and requires from organized public California societies some substantial acknowledgment of the excellence of the piano produced at home, in order to enable me to make head against the fashion of admiring a piano in proportion to the distance from California of the place of its manufacture.

Third—From sixty to seventy pianos are imported into California and sold monthly. This business, which would employ one hundred and twenty hands, might in a short time, as I have stated before, be all secured here; we would turn out pianos equal in all respects to the imported ones, and superior in the quality and durability of the wood used. To accomplish this result of building up home industry is the point at which we are both aiming.

Fourth—As the last and most powerful reason in support of my claim to the gold medal in the seventh department—fine arts—I assert that in my pianos I have exhibited the most meritorious article in department seventh, and rely on the report of the committee on this class in support of this assertion.

I remain, respectfully yours, JACOB ZECH.

STATEMENT OF AITKEN & LUCE.

To the Committee on Gold Medals:

GENTLEMEN: We herewith file our reasons for claiming the gold medal in the seventh department.

First—We claim it because we had the largest collection of marble work, greatest variety, and worth more money than any in our line. We had the best sculpture and more of it than has ever been exhibited in the State Fair by any one firm. For the best sculpture we refer, first, to a "spread wing dove;" second, to an original design for a child's monument, with tablet resting on a pile of rocks, with a lamb resting in perfect repose in front. As works of art they have not been excelled in the State. Our exhibition consisted of five monuments of unquestioned proportion, four pieces of sculpture, and one marble table, the whole in California marble, thus demonstrating the fact that we have within ourselves the material for any purpose for which marble is used.

Second—Because we have labored almost exclusively for the last thirteen years to develop California resources, and have finally succeeded in producing a quality of marble that has no superior in this or any other country, it being more free from flint or iron, finer and more compact, stronger and capable of more "relief" than either Italian or Vermont.

Third—By such developments we will save more money in the State than any other branch of fine arts.

Fourth—That in bringing about this result we have been unaided by any except our own labor, and the acknowledged worth of the mate-

rial produced having thus far overcome all the discouragements naturally attendant on all new enterprises in new countries.

Fifth—We are supplying not only large portions of our own State but also a large portion of the marble that is used in Oregon. And by receiving the fostering care and encouragement which its importance demands, we hope to extend the demand for California marble until the whole Pacific Coast and the "Islands of the Sea" shall pay tribute towards the general wealth of the State, and thus give employment to hundreds of our own people.

The importance of the development of our marble quarries can scarcely be realized, except by persons who have paid some attention to this particular branch of industry. The development of quarries of equal quality within the same distance of New York that these are from San Francisco would add millions to the wealth of that State, and it only requires time to produce the same results here.

We have expended several thousand dollars in improvements and machinery in developing it.

For the above reasons we submit our claims, hoping you will appreciate our efforts in building up the real interests of the State, as well as cultivating a love for the beautiful, by awarding to us the gold medal for the seventh department.

AITKEN & LUCE.

Sacramento, October 15th, 1870.

STATEMENT OF S. W. SHAW.

Robert Beck, Esq., *Secretary State Board of Agriculture:*

Dear Sir: Your letter of September twenty-second, informing me that the Board required from all competitors for the gold medal premiums at their late Fair a written statement, giving their reasons why these premiums should be awarded them, was duly received. While this requirement seems to me eminently just and proper, and calculated to elicit a fund of valuable information in every department of agriculture, it does not seem hardly the right thing for an artist to attempt to set forth what he deems his own merits.

Art has been considered in all ages worthy of the patronage and encouragement of the State. Wherever it has flourished it has ever been referred to as evidence of prosperity, high culture, and refinement among the people. In a State like ours, so far removed from all the great commercial centers, the devotee of art labors under peculiar disadvantages. There being no art societies or galleries for the exhibition of their works, they are compelled to exhibit in shop windows or avail of such other opportunities as are offered. Seeing this want in a new State, the founders of the State Agricultural Society very commendably established a department of art, and set apart certain moneys to be awarded as premiums—the value of a premium not being the cash value of the thing received, but the stamp upon it, declaring the receiver worthy.

The gold medal of the State Agricultural Society being a prize worthy, and calculated to stimulate to higher efforts not only the recipient but all others who are striving for excellence, if justly bestowed; feeling confident that your honorable body fully intended to deal

impartially with all competitors, I placed in your Hall at your late Fair eight oil paintings, all properly belonging to one department of art—that the most difficult known—that of portraiture. Most of these paintings have been examined by the best connoisseurs we have in the State, and pronounced true works of art and worthy of any gallery in the world. None are perfect, and we are all liable to feel a partiality for ourselves. Making all allowance for this partiality, I feel that my exhibit justly entitles me to the award.

With this statement I leave my case with the enlightened Board of Agriculture, feeling confident that they will render impartial justice.

Very truly, your obedient servant, S. W. SHAW.

STATEMENT OF HOWARD CAMPION, OF SACRAMENTO.

To the Committee on Gold Medals, State Board of Agriculture:

GENTLEMEN: In accordance with circular of September twenty-second, I beg leave to lay before you the following reasons why I should receive the gold medal premium to be awarded for the best collection of paintings:

First—I had the finest oil paintings on exhibition, consisting of one animal painting of a doe and fawn, life size, which has been highly complimented by both the leading journals of San Francisco and this place. I claim this to be the finest and most attractive oil painting on exhibition.

Second—Seven portraits in oils, one of which was the portrait of the Hon. E. J. Lewis, which took the first premium as the best portrait on exhibition; three landscape paintings, consisting of Cascade Lake, Carson Valley; Emerald Bay, Lake Bigler, and two flower paintings. Total number of oil paintings—thirteen.

I claim for the above the kind attention of the honorable committee, and feel that they will award "merit to whom merit is due."

HOWARD CAMPION.

STATEMENT OF D. H. WOODS.

Gentlemen of the Gold Medal Committee:

I have received notice from your Secretary that you require competitors for gold medal premiums to file statement in writing, setting forth their claims to said medals. In complying with your rule, I will confine myself to the reasons why I think the medal for the —— class should be awarded to an artist, instead of a manufacturer.

First—The works of artists form a more attractive feature of the exhibitions.

Second—The outlay of time necessary to make a creditable display, for which the artist can hope for no adequate remuneration except the prizes, and the influence they exert upon his future business; while the manufacturer's wares have a fixed value, in accordance with the cost of production.

Third—The long years the artist must give to his studies, without remuneration, in order to fit himself to make a creditable display of original paintings.

In regard to my own claims, I merely call your attention to the large space I filled, including portrait, landscape, animal, and still life painting; also, to the award of the committee on that class of works at the late Fair.

Respectfully submitted, D. H. WOODS.

STATEMENT OF MRS. W. E. BROWN, OF SACRAMENTO.

Major Beck, Secretary:

DEAR SIR: In reply to your kind favor of the twenty-second, requesting my "reasons why I should be awarded the gold medal in the seventh department, as to what claims I have as a competitor," etc., delicacy would lead me to answer that my works must speak for themselves. In an artistic point of view I believe such an encouragement as the bestowal of that premium would prove an incentive to further progress on my part to become worthy the proud title of "California artist," which your committee have been pleased to designate me, as we all need some little encouragement, and more than a passing notice for continued efforts. Now for the facts of the case. I have spent much time last year amid our wild mountain scenery, working with colors on the spot, and feel that I have some fine studies, which for one self-taught, my friends are kind enough to say have compared very favorably with skilled professionals. And even at your last year's exhibition, hanging side by side with those of a neighboring artist, my pictures were favorably mentioned in three different criticisms in connection with those referred to; which, although quite flattering to me, that my efforts could be and had been mistaken, and counted in with those of a professional, thereby increasing the merit of his display, for which two premiums were awarded, and I feel well bestowed. Yet that triumph was not so great an encouragement as a premium, however trifling, from your honorable Board, to inspire me to further progress. Perhaps you think as on several occasions I have taken the first prize for fruit and flowers, I am encroaching on the rights of legitimate artists in presuming to compete for the highest prize. Yet to the earnest worker for and lover of art, the goal will be reached in view of all discouragements. And thus I leave my fate in your hands.

Very respectfully, MRS. WM. E. BROWN.

STATEMENT OF J. C. DEVINE & BRO., OF SACRAMENTO.

To the Committee on Gold Medals of the State Agricultural Society:

GENTLEMEN: We, the undersigned, as competitors in the sixth and seventh departments of the recent Fair, having made the most meritorious exhibition in those departments (for which we received the two

first premiums), hereby most respectfully file our claim for the gold medal, and base our claim on the following facts:

First—All work exhibited by us is of our own manufacture, and has been under the direction of no other person.

Second—That after due consideration for business we will abundantly prove that our sole aim has always been to perfect and elevate our business in California by trying to emulate the most celebrated sculptors, and by creating a friendly rivalry among other manufacturers.

Third—That our large monument built of Italian blue or veined marble is of the highest standard of architectural beauty and finish, and is also of original design, the product of our own brains. That we will pit the aforesaid piece of workmanship against anything of marble work of its nature in the State. Its style of architecture is the Ionic, though somewhat relieved by a composite architecture greatly hightening the brilliancy and effect of its appearance. Its projections are so accurate, and the relieved work so small and fine, that we claim for it the name of "masterpiece." We began this piece of work in March last, expecting to have more competitors, and advanee the idea that inasmuch as that the work was executed solely with a view to competition and not for merchandise, our claim is thereby enhanced. The cost of labor upon it was seven hundred dollars.

Fourth—Our Gothic tombstone, with shield and wreath of flowers, we claim to be as true to nature as any that can be hewn from marble in this or any other country. The wreath consists of an interlaced circle of immortelles and lilies (a peculiarly difficult flower to cut), and is finished in the highest style of art.

Fifth—Our scroll, with sleeping infant, is, from the very peculiar nature of the material from which it is cut, a most praiseworthy production. We append the following extract from the *Sacramento Reporter* of April eighteenth last:

"In dropping into the marble works of the Devine Brothers we were highly pleased by the inspection of a sleeping baby on couch, by the beautiful proportion of the limbs and accuracy of expression, which makes it compare favorably with the best masters, and was executed by Mr. J. C. Devine's own hand, as an actual occurrence."

Sixth—Our modern style chimney piece and mantel is cut from Italian statuary marble, and is provided with side trusses; on each front side is cut a fruit piece in bold relief, surrounded and entwined with the grapevine and leaf, which for accuracy and perfect finish we challenge the Pacific Coast.

Seventh—This statuette, strictly speaking, comes under the head of the sixth department, and we trust will serve to show what care and time, combined with genius, may do. It is an allegorical representation of Virtue and Innocence, and fearing that in deseribing it we would overstep the bounds of modesty, we most respectfully ask that, if consistent with convenience, the committee will call upon us at our works and examine it in person.

Eighth—We are young mechanics who, in an honorable desire to excel, have given our care, time, and means for the advancement of our business on this coast, and hope by your encouragement to persevere until it shall be truly said California excels in marble work and statuary, as

our last Fair has abundantly proven she does in all other arts and industries.

All of which is most respectfully submitted by your humble servants,

J. C. DEVINE & BRO.

ADDENDA.

We view with regret the fact that mines or leads of marble in this State are but poorly developed. We have ourselves inspected the various mines in Amador and Placer Counties, and are of opinion that none of it, in qualities most essential for working, equals the Cararra marble. We are satisfied that with the necessary encouragement from the State, marble quarries could be developed which would not only supply our own demands, but furnish material for exportation, thereby inaugurating another of the already long list of products for which our State has become famous.

Respectfully, your obedient servants,

J. C. DEVINE & BRO.,
Nos. 216 and 218 K street, between Seventh and Eighth,
Sacramento, California.

REPORT OF THE GOLD MEDAL COMMITTEE FOR 1870.

To the State Board of Agriculture:

GENTLEMEN: The committee appointed by your Board to award the gold medals offered by your Society for the most meritorious exhibition in each of the several departments of the last Fair, would report that they have examined the articles on exhibition and have read and considered the several claims filed by the different competitors, and have awarded the medals as follows:

SECOND DEPARTMENT.

William Sawdon—For California invented and manufactured sewing machine.

THIRD DEPARTMENT.

F. Foster—For California bookbinding.

FOURTH DEPARTMENT.

To Nichols, Falvy & Co.—For woodware (tubs, pails, etc.), California manufacture.

FIFTH DEPARTMENT.

To B. N. Bugbey—For California wines and brandies.

SIXTH DEPARTMENT.

To J. R. Nickerson—For exhibition of fruits of various kinds.

SEVENTH DEPARTMENT.

To Jacob Zech—For California manufactured pianos.

The Committee, in addition to the above, recommend the Board to award, if they can consistently do so, special gold medals to each of the following parties:

To John S. Finch—For ramie plant or fiber.
To John Bruener—For furniture.
To the Sacramento Valley Beet Sugar Company—For samples of beet sugar.
To S. W. Shaw—For oil paintings.

All of which is respectfully submitted.

H. L. NICHOLS,
B. B. REDDING,
J. F. HOUGHTON,
LEONARD GOSS.

STATISTICAL TABLES FOR 1869-70.

AS REPORTED TO THE SECRETARY OF THE STATE BOARD OF AGRICULTURE BY THE STATE SURVEYOR GENERAL.

TABLE OF STATISTICS FOR 1869–70.

Industrial and other statistical information for the years 1869–70, *as reported to the Surveyor General by the several County Assessors, embracing the entire State.*

COUNTIES.	Acres of Land Inclosed.....	Acres of Land Cultivated....	WHEAT.		BARLEY.		Acres of Land Cultivated in 1870.....	Acres Wheat sown in 1870..	Acres of Barley sown in 1870.....
			Acres ...	Bushels..	Acres ...	Bushels..			
Alameda	91,328	117,763	65,991	1,017,031	36,030	525,670	117,763	65,990	36,630
Alpine	7,000	650	150	3,000	300	6,000	650	150	300
Amador	57,274	18,250	1,450	20,000	2,000	35,225	18,140	2,240	2,440
Butte	300,830	55,000	41,000	600,000	12,500	275,000	56,000	44,000	13,750
Calaveras	46,009	12,003	775	6,015	1,000	16,900	13,000	270	1,305
Colusa.....	175,000	200,000	30,000	500,000	16,870	330,000	150,000	25,000	10,000
Contra Costa.....	124,559	69,739	51,041	778,619	15,172	354,460	96,348	69,000	13,107
Del Norte.....	9,086	2,311	630	7,102	97	2,310	1,804	343	80
El Dorado	88,311	15,225	904	10,674	257	2,670	15,225	904	267
Fresno	16,375	19,280	3,650	52,370	7,340	136,800	19,865	4,768	6,473
Humboldt.....	35,241	13,576	1,127	33,940	562	28,371	13,800	1,250	745
Inyo	2,000	1,500	280	2,000	300	2,500	1,000	250	300
Kern	4,835	3,200	687	20,610	1,251	37,530	2,700	500	300
Klamath	4,890	1,935	180	4,700	70	900	2,100	200	100
Lake	59,596	10,739	4,704	334,049	47,030	152,438	12,000	5,000	4,900
Lassen	21,473	6,440	678	10,107	3,240	78,245	6,850	780	3,420
Los Angeles.....	25,400	35,600	2,600	60,400	11,000	330,000	47,000	300	16,000
Marin									
Mariposa	24,325	5,500	935	4,000	1,900	4,950	5,600	960	2,000
Mendocino.....	190,000	80,000	25,000	300,000	15,600	200,000	84,000	26,000	16,000

Merced	145,000	90,000	60,000	450,000	18,000	216,000	98,000	62,000	19,000
Mono	4,525	1,200	299	3,881	601	13,209	1,300	310	620
Monterey	138,863	97,874	65,215	456,890	24,860	968,800	109,354	68,327	34,412
Napa	104,600	40,795	34,675	450,775	3,280	72,160	42,000	34,675	3,130
Nevada	12,643	6,120					6,112		
Placer	78,175	29,635	10,000	130,000	2,200	33,000	26,000	9,000	2,000
Plumas									
Sacramento	276,485	73,957	8,980	128,315	30,044	600,156	69,700	9,805	36,178
San Bernardino	20,000	16,500	3,600	25,000	6,500	75,000	19,500	2,400	12,500
San Diego	8,700	17,000	2,000	3,800	3,200	7,000	16,000	2,100	3,300
San Francisco	13,420	2,000	5	1,000	103	2,550	3,282	8	90
San Joaquin	275,000	200,000	117,000	1,521,000	29,640	622,482	235,000	150,000	40,000
San Luis Obispo	98,710	17,682	7,013	153,270	1,255	51,168	18,000	7,100	1,300
San Mateo	150,000	85,000	15,000	450,000	15,000	500,000	85,000	15,000	15,000
Santa Barbara	45,002	42,006	5,988	8,786	10,546	210,920	44,000	5,900	11,000
Santa Clara	489,000	149,000	95,000	1,950,670	12,500	260,175	151,620	97,000	11,300
Santa Cruz	52,195	16,994	7,647	107,439	2,804	89,140	17,500	8,000	4,000
Shasta									
Sierra	17,810	2,018	492	9,474	790	19,154	2,020	495	795
Siskiyou	65,840	24,680	7,210	134,890	1,972	51,442	26,000	8,000	2,000
Solano	276,429	245,684	125,310	1,827,642	12,560	376,800	250,000	128,000	13,500
Sonoma	450,679	247,520	124,275	1,864,125	16,200	324,160	248,520	125,000	16,500
Stanislaus	62,000	250,000	195,000	3,060,000	50,000	990,000	300,000	250,000	50,000
Sutter	150,100	74,943	49,300	788,869	18,525	461,125	83,627	54,086	20,221
Tehama	91,210	30,709	17,606	400,000	9,100	19,000	35,000	21,000	10,000
Trinity	15,273	4,284	1,287	11,576	150	2,995	5,633	2,200	200
Tulare	30,000	20,000	2,500	62,500	2,000	51,200	25,000	3,500	2,500
Tuolumne									
Yolo	123,773	95,000	68,226	1,159,821	13,916	278,320	100,000	70,500	15,500
Yuba	85,700	47,300	8,200	116,856	13,520	229,300	52,800	8,755	14,800
Totals	4,564,064	2,596,612	1,263,010	19,041,190	471,785	9,045,225	2,634,813	1,390,466	466,963

TABLE OF STATISTICS—Continued.

COUNTIES.	OATS.		RYE.		CORN.		BUCKWHEAT.		PEAS.	
	Acres.....	Bushels.....	Acres.....	Bushels.....	Acres.....	Bushels.....	Acres.....	Bushels.....	Acres.....	Bushels.....
Alameda	3,240	98,460	137	2,510	562	13,180	17	204	166	4,038
Alpine	200	5,000	10	200	35	1,500	10	200	20	400
Amador	10	250			1,050	20,240	4	80	15	340
Butte	700	10,000	700	14,700	300	11,000			70	1,400
Calaveras	19	72	Very little.		250	6,780			A little for	private use.
Colusa	24	480			80	2,330			88	3
Contra Costa	1,803	48,805	60	1,700	74	960			20	340
Del Norte	624	15,800	1	15	8	160			140	2,651
El Dorado	97	332	50	409	10	320				
Fresno	12	485	22	500	476	12,340	6	150	3	85
Humboldt	3,793	183,420			258	7,860	5	100	1,058	63,830
Inyo	25	300	10	50	325	3,000	3	15	1	10
Kern					406	14,221				
Klamath	100	1,700			50	700			30	870
Lake	224	5,305	5	129	745	10,702			½	25
Lassen	1,246	35,138	48	882	18	619				
Los Angeles	200	2,000	70	2,100	9,900	425,700	70	2,100	60	1,500
Marin										
Mariposa	190	350	125	215	28	360			3	90
Mendocino	Cut for hay				1,000	20,000			500	15,000

Merced					1,500	65,000				
Mono	136	3,937	4	48	12	165	4	72		
Monterey	839	33,500	20	750	319	8,200	20	510	244	7,180
Napa	1,000	32,000	20	320	1,425	45,600			4	55
Nevada					100	1,200				
Placer	Cut for hay.		50	500						
Plumas										
Sacramento	1,126	18,046	22	256	2,241	67,682	12	250	18	705
San Bernardino					2,500	60,500				
San Diego	30	765			500	10,000			20	875
San Francisco	138	4,190							7	105
San Joaquin			125	1,200	1,000	28,500			7	392
San Luis Obispo	485	17,646	25	529	3,940	166,760	26	546	42	816
San Mateo	10,000	300,000	40	800	50	1,400			200	4,000
Santa Barbara	800	5,039			10,289	262,225			50	350
Santa Clara	5,000	140,150	470	10,205	1,000	30,000	25	600	325	14,250
Santa Cruz	1,141	43,165	12	160	617	18,106	146	1,854		
Shasta										
Sierra	220	11,245								
Siskiyou	3,514	94,980	28	984	110	3,012	8	122	8	140
Solano	1,050	21,000			826	8,260				
Sonoma	11,200	280,620	195	3,256	3,860	100,360	6	108	30	1,516
Stanislaus					250	8,310				
Sutter	375	11,900			500	15,000				
Tehama	125	2,400			150	2,800				
Trinity	110	2,172			70	860				
Tulare	20	600	25	750	357	6,000			1	16
Tuolumne										
Yolo	98	800	62	930	320	2,880	5	130	60	175
Yuba	895	26,550	4	200	810	32,800			10	220
Totals	50,809	1,458,602	2,340	44,298	48,321	1,497,592	367	7,041	3,200½	121,377

TABLE OF STATISTICS—Continued.

COUNTIES.	PEANUTS.		BEANS.		CASTOR BEANS.		POTATOES.		SW'T POTATOES.	
	Acres.....	Pounds.....	Acres.....	Bushels.....	Acres.....	Bushels.....	Acres.....	Bushels.....	Acres.....	Bushels.....
Alameda			599	5,975			1,013	72,640		
Alpine			10	200			150	12,000		
Amador	2	480	30	340			140	9,540	8	1,450
Butte	20	42,000	50	1,400			150	21,300	40	4,000
Calaveras			10	300			70	6,200	3	150
Colusa							30	1,523	6	300
Contra Costa			160	3,000			88	8,350		
Del Norte			5	140			138	20,865		
El Dorado			18	410			20	2,190		
Fresno	1	1,200	7	130			40	7,470	6	940
Humboldt			2	65			2,347	635,385		
Inyo			6	60			10	20		
Kern	2	3,000	25	750			30	4,200	5	500
Klamath			20	600			60	2,000		
Lake			4	117			31	3,044		
Lassen			2	42			31	6,480		
Los Angeles	75	68,500	1,500	29,800	60		1,300	111,800	120	9,000
Marin										
Mariposa			4	140			54	2,400	5	100
Mendocino							3,000	450,000		

Merced			65	2,080			60	8,250	40	2,800
Mono			4	70			60	3,920		
Monterey			976	47,300			2,254	224,700		
Napa			6	190			25	3,250		
Nevada							100	600		
Placer							180	15,212		
Plumas										
Sacramento	11	8,200	567	18,546			452	50,113	528	74,082
San Bernardino			50	1,300			40	4,500	14	1,700
San Diego			75	1,000			80	5,780	25	1,400
San Francisco			26	520			1,620	178,200	44	3,080
San Joaquin			25	1,312			250	23,150	6	992
San Luis Obispo	5	2,500	1,200	50,400	2	180	1,169	98,730	24	1,920
San Mateo			500	21,120			6,000	600,000		
Santa Barbara			7,092	143,840			900	18,000		
Santa Clara			729	15,950			1,250	105,400		
Santa Cruz			384	5,544			230	41,300	¼	5,000
Shasta										
Sierra							74	7,110		
Siskiyou			22	500			310	41,674		
Solano	3	1,500	16	320			250	12,000	23	690
Sonoma	4	3,000	30	540			5,600	260,300	5	260
Stanislaus			10	600						
Sutter	3	not weighed	70		75		38	3,000	61	4,800
Tehama	50	12,000	20	550			65	10,140	20	4,000
Trinity			12	195			180	14,965		
Tulare	1	320	8	100			53	5,000	27	1,375
Tuolumne										
Yolo	45	67,000	400	16,000			325	32,065	140	13,860
Yuba	6	9,000	130	3,100	100	150,000	140	14,500	22	2,300
Totals	228	218,760	14,870	374,546	237	150,180	30,407	3,161,356	1,172	134,699

TABLE OF STATISTICS—Continued.

COUNTIES.	ONIONS.		HAY.		FLAX.		HOPS.		TOBACCO.		BEETS.
	Acres.....	Bushels.....	Acres.....	Tons.....	Acres.....	Pounds.....	Acres.....	Pounds.....	Acres.....	Pounds.....	Tons.....
Alameda	293	25,108	7,465	12,474	375	68,600	5	1,870			1,295
Alpine	4	200	500	600							20
Amador	20	1,470	7,420	7,150			16	8,210			24
Butte	150	6,900	8,000	6,408			5	15,000	5	3,000	300
Calaveras	5	160	5,300	5,180			See written report				2
Colusa			3,000	10,300					2	1,000	
Contra Costa	26	3,220	13,881	18,612	2	2,000					1,198
Del Norte			524	706							13
El Dorado			5,479	4,199							
Fresno	2	275	1,200	1,670							15
Humboldt	3	285	2,780	5,635							140
Inyo	5	250	200	250							2
Kern	3	700	1,200	1,200				5			24
Klamath	3	70	1,420	4,875							
Lake	⅛	40	3,565	5,781							56
Lassen	3	324	3,183	5,114							18
Los Angeles	65	8,100	1,600	4,700	1		34	19,000	30	22,500	90
Marin											
Mariposa	3	270	7,000	9,220					1	110	7
Mendocino			30,000	30,000			200	200,000			

Mereed	20	2,200	10,315	10,315							
Mono	3	128	1,423	1,737							11
Monterey	600	3,500	2,150	4,400	60	18,000	72	1,550	40	31,400	35
Napa	4	600	8,720	11,300			15	16,000			85
Nevada	20	100	2,612	2,790			10	10,000			30
Placer			8,470	8,500							
Plumas											
Sacramento	470	42,915	20,731	16,001	12	7,200	253	271,934			265
San Bernardino	20	1,500	1,150	2,000							25
San Diego	10	325	1,600	3,000							17
San Francisco	47	1,410	1,300	1,950							3,500
San Joaquin	24	5,136	32,850	24,675			17	14,500			20
San Luis Obispo	26	2,912	3,761	7,316	37	12,318	2	1,000	3	895	46
San Mateo	125	12,500	15,000	24,000	300		25	12,525			2,000
Santa Barbara			6,091	18,273	250	13,350					80
Santa Clara	965	86,350	13,750	27,500			67	14,475	40	35,000	950
Santa Cruz			3,430	7,124	120	11,751	20	2,000			7
Shasta											
Sierra			5,805	5,519							13
Siskiyou	14	3,485	5,212	10,111							10
Solano	5	150	18,649	21,384	455	318,500					35
Sonoma	10	1,000	28,680	43,020			26	10,200			500
Stanislaus			9,400	7,536							
Sutter			10,000	15,000							
Tehama	10	3,050	5,500	6,700							7
Trinity	9	450	2,467	3,424							36
Tulare	2	150	2,000	3,000					2	325	10
Tuolumne											
Yolo	132	19,806	8,694	13,046			40	44,000			55
Yuba	30	5,460	13,065	9,357			34	30,060			28
Totals	3,131⅛	240,496	346,362	443,052	1,612	451,719	841	672,329	123	94,230	10,969

TABLE OF STATISTICS—Continued.

COUNTIES.	Tons of turnips	Tons of pumpkins and squashes	COTTON. Acres	COTTON. Pounds	Pounds of silk cocoons	Acres of broomcorn	Pounds of butter	Pounds of cheese	Pounds of wool	Pounds of honey
Alameda	32	1,280					75,355	4,218	215,775	3,320
Alpine	35	25					50,000	2,500	250,000	500
Amador	4	38			20	45	21,240	1,090	41,258	6,240
Butte	110	200				90	150,000	9,000	360,000	20,000
Calaveras	2	18				20	18,700	1,000	472,319	14,200
Colusa		2				10	32,117	500	900,000	2,640
Contra Costa	820	1,570					229,805	36,960	121,465	15,400
Del Norte	45	3					37,620		3,100	2,675
El Dorado							135,262	16,290	14,500	3,840
Fresno	6	335					15,650	2,000	436,700	14,375
Humboldt	21						72,340	1,875	26,000	3,650
Inyo	2	20					2,000			150
Kern	12	300				1	6,000		416,000	6,000
Klamath							3,000			460
Lake	4	2,021					29,728	53,381	48,856	3,550
Lassen	8	57					37,350	3,600	965	10
Los Angeles	16	2,200			1,000	70	30,500	11,000	1,202,300	118,800
Marin										
Mariposa	17	16					10,000	380	27,273	110
Mendocino							150,000	8,000	300,000	10,000

Merced		200					11,500	1,800	631,713	20,300
Mono	9	12					28,050	3,750	5,100	50
Monterey	45	550				12	111,400	1,613,000	536,290	53,000
Napa	34	240				3	200,000	2,250	22,550	6,000
Nevada	40	35			600	20	10,300	1,000		2,700
Placer		20					6,350	2,500	7,600	10,000
Plumas										
Sacramento	79	2,624			1,500	178	254,200	23,060	295,565	24,073
San Bernardino		750				25	24,500	2,950	76,500	38,650
San Diego	25	750			40	3	6,450	4,500	75,600	1,500
San Francisco	2,300	75					11,500	16,000		200
San Joaquin	25	40					240,000	20,000	157,860	2,500
San Luis Obispo	467	172				½	296,400	327,425	498,760	22,160
San Mateo		10					225,000	250,000		1,500
Santa Barbara	47	395			450		10,034	30,990	743,528	6,420
Santa Clara	93	2,175			375		375,450	1,675,000	47,310	6,120
Santa Cruz	2	1,150					81,300	4,000		1,260
Shasta										
Sierra	39	8					65,200	12,500		2,820
Siskiyou	22	64				3	76,482	14,982	35,300	3,486
Solano	16	15					19,705	20,681	218,770	4,000
Sonoma	25	1,580					640,740	240,820	150,870	2,325
Stanislaus							6,650	1,800	1,146,000	150,000
Sutter					50		70,000	5,800	117,792	
Tehama	5	12				87	25,400	2,400	510,500	2,000
Trinity	126	87					19,500	600	9,000	800
Tulare	8	78				3	8,150	2,000	872,670	1,100
Tuolumne										
Yolo	50	675					170,000	1,200	205,940	9,500
Yuba	52	340				10	63,000	4,400	67,000	4,270
Totals	4,643	20,142			4,035	580½	4,166,928	4,537,202	11,268,123	602,654

TABLE OF STATISTICS—Continued.

COUNTIES.	Number of apple trees.	Number of peach trees.	Number of pear trees.	Number of plum trees.	Number of cherry trees.	Number of nectarine trees	Number of quince trees.	Number of apricot trees.	Number of fig trees	Number of lemon trees.
Alameda	86,615	13,595	35,568	21,264	28,780	962	1,992	3,566	1,015	38
Alpine	500	200	50	25	25	10	20	25		
Amador	34,850	20,200	12,460	3,150	1,820	860	1,250	730	1,050	40
Butte	30,000	30,200	5,080	3,000	1,010	890	320	732	580	
Calaveras	21,900	16,400	5,360	3,100	1,166	728	52		400	10
Colusa	500	500	300	100	100	50	50	100	200	
Contra Costa	34,842	18,845	8,696	3,481	3,025	284	1,584	732	686	35
Del Norte	9,218	206	504	527	347	15	20	5	6	2
El Dorado	87,864	41,611	10,636	5,719	2,511	753	982	596	839	2
Fresno	1,845	3,172	434	78	75	43	57	152	203	
Humboldt	49,150	520	971	2,185	1,275	10	95	20	5	3
Inyo	300	500	20	20	15	25		25	10	
Kern	135	500	50	75	50	70	10	100	100	6
Klamath	3,200	1,600	200	400	105	61	43	37		
Lake	10,365	5,023	965	884	424	110	121	95	86	
Lassen	4,232	2,395	332	434	59	27	71	163		
Los Angeles	7,100	11,500	5,200	200	150	300	1,100	1,850	2,000	3,700
Marin										
Mariposa	6,000	6,890	870	400	220	75	125	350	275	
Mendocino	5,000	20,000	2,000	1,800	1,200	100	100	100		

Merced	20,000	16,000	3,200	1,400	375	160	85	480	640	75
Mono	500	126	4	90						
Monterey	28,735	13,412	19,930	2,418	1,003	513	91	1,120	168	42
Napa	58,000	25,000	17,350	5,700	7,840	830	1,320	1,835	780	25
Nevada	21,370	10,865	3,500	2,460	1,456	660	465	1,008	341	
Placer	31,000	18,000	11,000	25,000	1,200	900	2,000	400	2,100	40
Plumas										
Sacramento	89,298	88,927	25,842	14,053	3,960	3,565	3,791	12,054	4,781	127
San Bernardino	7,450	13,500	750	1,320	80	350	250	720	525	320
San Diego	3,500	1,355	780	230	247	95	130	950	575	1,280
San Francisco	3,600	150	800	34	26	370	280	984	43	
San Joaquin	47,000	35,000	9,000	6,000	1,250	1,000	1,000	2,750	3,500	12
San Luis Obispo	4,750	1,630	1,200	620	250	125	340	225	175	65
San Mateo	15,000	1,500	1,500	1,000	1,000	1,000	500	1,000	50	20
Santa Barbara	24,789	13,113	8,420	1,224	2,835	1,028	3,500	4,915	8,002	1,320
Santa Clara	890,200	75,300	69,290	23,270	16,950	1,225	7,897	8,120	1,670	25
Santa Cruz	37,293	3,814	4,169	3,115	1,666	65	320	649	142	5
Shasta										
Sierra	7,628	4,950	972	380	372	49	98	38	11	1
Siskiyou	35,482	15,675	2,004	1,572	1,216	486	506	487	47	
Solano	25,150	20,392	10,684	5,687	3,796	298	387	9,863	4,286	25
Sonoma	257,650	50,900	12,460	35,900	6,850	850	3,300	1,509	1,300	
Stanislaus	3,011	6,375	727	543	180	109	36	553	364	
Sutter	20,000	21,125	4,055	2,391	588	1,028	839	1,977	1,662	22
Tehama	9,000	30,000	2,500	1,800	300	900	200	1,400	500	7
Trinity	6,080	4,260	2,348	1,367	583	301	176	295	12	2
Tulare	15,000	23,500	6,515	3,115	504	852	3,415	6,938	1,415	539
Tuolumne										
Yolo	42,971	52,440	17,484	5,758	2,800	1,976	1,178	1,938	2,767	9
Yuba	37,200	26,500	8,500	5,750	1,890	2,220	2,800	4,530	2,344	54
Totals	2,180,273	767,666	334,680	199,043	101,574	26,328	42,896	76,116	45,655	7,851

TABLE OF STATISTICS—Continued.

COUNTIES.	Number of orange trees	Number of olive trees	Number of prune trees	Number of mulberry trees	Number of almond trees	Number of walnut trees	Number of gooseberry bushes	Number of raspberry bushes	Number of strawberry vines	Number of grape vines
Alameda	23	251	4,120	120	9,249	1,662	43,739	725,882	5,758,860	136,148
Alpine							500	300	500	300
Amador	160	16	180	5,000	1,075	475	12,940	16,220	70,940	1,683,000
Butte	230	240	11	402	900	40	7,000	2,000	1,500,000	807,000
Calaveras	28	2	45	700	100	903	3,300	25,000	700,017	107,063
Colusa					100					5,000
Contra Costa	82	100	108	6,059	324	2,403	4,805	5,100	520	362,680
Del Norte	1			12		19	886	25,530	9,400	10
El Dorado	14	3	252	63,400	385	377	7,104	16,206	150,834	1,357,895
Fresno	35		26		12	94			6,320	14,680
Humboldt					20	60	3,317	41,690	55,740	345
Inyo				10		10	50	100	200	1,000
Kern	18	5	3	20	2	20	1,000	500	33,000	3,000
Klamath					5		800	7,000	12,000	980
Lake	6	1	17	23	136	106	370	478	5,202	11,814
Lassen						64	372	4,417	28,938	2,158
Los Angeles	34,000	2,000	75	250,000	550	5,100	1,000	6,000	144,000	3,925,000
Marin										
Mariposa	1			89	35		570	1,780	2,123,000	120,000
Mendocino							1,000	1,500	12,000	25,000

Merced				6,014	45	30	65	25	38,000	492,140	
Mono							130	241	2,614		
Monterey		38	203	261	337	128	2,000	2,500	250,000	180,500	
Napa	25		145	52,015	380	800	8,100	520	4,550	1,700,500	
Nevada	20			69,000	361	78	1,900	7,800	31,500	80,750	
Placer	29		250	2,700	600	225	1,200	40,000	133,420	617,618	
Plumas											
Sacramento	174	162	478	375,101	2,293	7,548	5,420	16,417	346,981	1,718,914	
San Bernardino	720	80	350	1,000	650	820	500	7,000	10,500	481,450	
San Diego	2,835	750		2,480	149	380	289	500	1,300	85,000	
San Francisco							18,000	600	22,000	15,000	
San Joaquin	30	6	300	250	500	475	3,250	2,000	30,000	675,000	
San Luis Obispo	20	315	20	175	25	215	700	600	37,000	53,700	
San Mateo	10	20	100	25,000	500	500	1,000	1,000	200,000	15,000	
Santa Barbara	1,521	25,004	2,212	15,431	14,565	6,470	5,750	940	35,750	396,518	
Santa Clara	167	155	2,375	12,500	525	1,870	20,150	2,750	2,775,000	1,000,000	
Santa Cruz	30	28	235	3,025	32	560	2,149	12,200	1,000,000	264,000	
Shasta											
Sierra	1		16	20	10	19	1,964	8,400	4,760	9,600	
Siskiyou			41	9,415	46	137	10,740	7,944	50,807	47,900	
Solano	75	15	175	19,764	2,561	3,769	10,469	646	1,960	1,128,000	
Sonoma	10		275	500	2,620	420	12,900	3,020	127,120	3,240,520	
Stanislaus	10				25			2,500	25,000	150,000	
Sutter	3		48	32,429	290	452	393	279	2,475	273,102	
Tehama	10	5	20	17	79	23	600	100	400,000	210,560	
Trinity					22	15	3,465	18,789	109,345	40,870	
Tulare	108	55	41	1,890	481	1,775	397	1,290	41,700	256,200	
Tuolumne											
Yolo	8	14	309	650,000	1,136	750	560	101	11,075	377,400	
Yuba	130	38	44	5,000	690	646	7,000	12,400	127,000	475,000	
Totals	40,534	29,303	12,474	1,609,822	41,815	39,438	207,844	1,030,265	16,431,328	22,548,315	

TABLE OF STATISTICS—Continued.

COUNTIES.	Gallons of wine.....	Gallons of brandy.....	Number of horses.....	Number of mules.....	Number of asses.....	Number of cows.....	Number of calves.....	Number of beef cattle	Number of oxen.....	Total number of neat cattle.....
Alameda	3,080	500	6,525	733	11	4,063	2,462	1,881	327	16,002
Alpine			400	25	2	1,000	800	400	200	2,400
Amador	97,240	1,450	2,240	230	36	2,190	1,640	2,090	340	6,260
Butte	8,000	500	7,000	900	150	2,985	3,800	3,200	200	10,185
Calaveras	10,000	37,500	2,500	210	39	2,001	1,513	2,370	272	6,155
Colusa			6,402	610	38	2,429	2,000	6,000	10	17,489
Contra Costa	66,470		6,751	541	40	8,677	6,356	2,922	62	24,033
Del Norte			693	69	3	811	601	1,172	158	2,742
El Dorado	133,985	6,400	2,315	160	41	3,260	2,660	3,884	255	10,059
Fresno			5,327	460	72	53,304	14,256	9,650	460	77,670
Humboldt			5,857	650	16	9,218	6,825	3,189	560	25,912
Inyo			798	134	53	203	30	798	52	1,083
Kern			4,051	260	212	20,042	20,042	2,951	254	63,231
Klamath			450	100	14	700	500	1,500	90	2,290
Lake			4,331	124	11	1,444	1,363	718	24	3,549
Lassen			1,984	201	4	2,647	2,357	7,180	77	12,261
Los Angeles	1,132,300	26,000	13,200	2,700	270	3,500	3,300	17,100	500	24,400
Marin										
Mariposa	10,000	1,000	1,510	224	76	1,400	1,400	5,000	300	8,100
Mendocino			10,000	3,500	40	15,000	10,000	3,000	800	28,800

Merced	35,000	2,000	3,513	289	11	602	13,794	28,860	35	43,290
Mono			815	87	25	834	643	3,203	173	4,853
Monterey	5,200	700	7,409	376	15	7,716	4,068	17,774	61	29,610
Napa	94,320	30,420	5,420	510	50	3,370	2,520	3,875	116	9,881
Nevada	20,250	1,000	2,257	153	4	2,650	1,618	500	668	4,936
Placer	125,000	5,000	1,832	181	15	876	850	1,100	510	3,236
Plumas										
Sacramento	87,536	6,197	7,711	470	113	7,430	5,805	4,599	215	18,059
San Bernardino	76,400	12,316	6,500	550	50	2,875	2,530	10,850	240	16,495
San Diego	3,000		9,730	831	78	3,050	2,986	22,527	546	29,109
San Francisco			9,000	180	5	3,150	120	130	40	3,440
San Joaquin	35,250	2,684	13,475	1,000	10	4,250	4,500	7,250	300	16,300
San Luis Obispo			8,618	296	43	4,730	In beef cattle.	19,635	145	24,510
San Mateo			3,117	247	22	6,218	1,560	1,090	183	12,440
Santa Barbara	25,000	590	3,593	425	35	2,299	1,564	4,274	95	8,232
Santa Clara	45,000	500	9,265	997	5	5,767	3,215	1,800	612	21,661
Santa Cruz	5,000		1,820	120	12	1,720	1,500	2,119	430	5,769
Shasta										
Sierra	950		846	180	30	1,635	1,398	535	239	3,807
Siskiyou	4,400		6,914	1,284	38	4,860	3,400	22,426	400	31,086
Solano	76,829	3,125	6,856	1,125	7	3,941	3,150	5,285	75	12,451
Sonoma	350,280	7,987	11,662	1,036	27	10,786	7,650	19,104	410	37,940
Stanislaus	9,150	900	5,344	1,013	40	1,780	1,650	1,686	20	5,136
Sutter	40,072	4,106	5,476	505	12	3,395	1,428	4,114	102	9,839
Tehama	22,000	400	7,100	410	7	5,600	2,800	1,200	96	9,696
Trinity	506	340	613	195	2	1,200	1,008	2,700	204	5,212
Tulare	20,560	5,000	9,647	516	58	15,640	12,432	33,013	370	61,455
Tuolumne										
Yolo	28,980	500	6,669	1,125	14	2,975	2,200	2,700	25	7,900
Yuba	64,800	3,900	3,590	352	10	3,380	2,320	3,013	94	8,807
Totals	2,636,558	161,015	241,146	26,284	1,866	247,603	168,614	300,367	11,345	787,771

TABLE OF STATISTICS—Continued.

COUNTIES.	Number of sheep	Number of Cashmere and Angora goats	Number of hogs	Number of chickens	Number of turkeys	Number of geese	Number of ducks	Number of hives of bees.
Alameda	45,276		34,772	51,051	3,791	971	7,642	318
Alpine	75,000	500	500	1,000	300	25	150	50
Amador	13,440	440	5,680	13,675	1,860	1,050	740	937
Butte	75,000	100	17,000	350,000	6,000	2,100	1,300	1,062
Calaveras	27,900	2,097	6,800	14,700	1,400	480	1,019	387
Colusa	176,321	50	30,000	20,000	10,000	500	600	500
Contra Costa	28,844	30	14,386	20,678	1,436	887	1,030	689
Del Norte	700		1,020	3,264	48	172	138	158
El Dorado	9,158	572	4,540	10,579	736	394	422	694
Fresno	104,850	900	22,480	8,575	1,150	60	1,300	650
Humboldt	8,718	30	8,720	18,127	920	212	235	367
Inyo	450		327	3,000	300		50	20
Kern	144,809	60	3,031	10,000	150	40	300	150
Klamath	25		850	2,470	9	20	15	40
Lake	11,885		8,927	18,402	3,891	410	353	360
Lassen	2,610		855	6,139	185	4	156	1
Los Angeles	437,200	4	5,000	36,500	1,700	600	2,200	1,980
Marin								
Mariposa	21,800	1,200	9,600	13,500	1,173	200	1,200	4
Mendocino	200,000		25,000	13,000	1,250	200	1,000	1,000

Merced	122,083		11,296	26,008	2,495	626	2,180	1,142
Mono	3,586		203	2,210	37	20	197	4
Monterey	177,390	1,300	7,189	43,800	630	850	1,200	2,512
Napa	8,200		11,000	19,370	5,750	420	2,200	400
Nevada	2,270		2,540	5,700	2,500	300	269	269
Placer	27,000	18	9,080	15,640	21,000	300	700	1,000
Plumas								
Sacramento	102,698	634	9,488	34,448	8,972	1,572	1,805	2,350
San Bernardino	50,840	44	2,055	10,850	520	354	1,845	1,120
San Diego	39,372	604	1,761	14,300	300	140	200	375
San Francisco	250	300	3,000	2,760	1,040	725	442	29
San Joaquin	36,543	1,205	17,500	80,000	10,000	2,000	2,500	1,600
San Luis Obispo	137,690	772	2,368	87,600	1,250	212	425	935
San Mateo	891	17	2,136	9,000	400	200	900	300
Santa Barbara	163,382	290	470	30,622	537	125	825	650
Santa Clara	32,370	1,650	2,900	95,975	1,350	7,000	3,520	1,625
Santa Cruz	335	250	1,560	6,350	290	260	400	288
Shasta								
Sierra	636	1	845	7,372	178	81	304	113
Siskiyou	15,610		6,910	20,120	710	392	628	784
Solano	43,754	30	11,413	75,670	12,846	1,575	3,286	450
Sonoma	50,300	125	20,900	49,275	2,430	5,250	4,880	395
Stanislaus	191,000		12,712	47,000	7,477	1,384	2,500	500
Sutter	29,448		9,603					
Tehama	135,000	97	14,000	20,000	2,000	400	300	200
Trinity	2,002		501	1,465	518	105	95	402
Tulare	158,631	4	18,153	630	160	62	91	560
Tuolumne								
Yolo	41,188		14,379	48,790	7,600	670	382	856
Yuba	19,298	265	7,380	23,820	12,634	580	2,330	733
Totals	2,975,753	13,589	400,830	1,394,975	139,923	33,928	54,254	28,854

TABLE OF STATISTICS—Continued.

COUNTIES.	GRIST MILLS.				Barrels of flour made	Bushels of corn ground	SAW MILLS.		Feet of lumber sawed	No. of shingles made
	Steam power	Run of stones	Water power	Run of stones			Steam power	Water power		
Alameda	5	24	2	3	36,472	21,496				
Alpine							3	4	2,000,000	400,000
Amador	1	3	1	2	5,600	6,460	7		5,630,000	175,000
Butte	1	3	3	7	125,000	50,000	12		4,500,000	600,000
Calaveras							4	6	1,900,000	7,000
Colusa	3	6					2			
Contra Costa	4	11			35,000	4,500				
Del Norte	1	1	1	2	440	60	3	2	1,204,000	50,000
El Dorado	1	2	1	1	30,000		15	10	8,940,000	224,000
Fresno			1	2	300	275	3		2,400,000	
Humboldt	1	1	2	2	2,850	480	7	2	40,000,000	16,000,000
Inyo			2	2	800	250		1	500,000	200,000
Kern			2	2	1,200	300	4	1	700,000	60,000
Klamath			2	2	1,170	280	2	5	2,500,000	40,000
Lake	1	2	1	2	15,000	2,500	4	2	1,350,000	600,000
Lassen			2	3	3,600	500		3	425,000	45,000
Los Angeles			5	10	6,000	32,000	1		10,000	
Marin										
Mariposa							6		2,200,000	300,000
Mendocino	2	2	3	4	25,000	500	15	5	45,000,000	10,000,000

Merced			3	9	14,046	7,000				
Mono			1	2	800	150	1	2	495,000	
Monterey	2	2	1	1	2,750					
Napa	2	5	2	3	21,000	18,400	3		280,000	18,500
Nevada	1	4			18,000	4,000	27	6	35,000,000	30,000,000
Placer							12	3	17,000,000	2,000,000
Plumas										
Sacramento	4	18	1	1	196,500	15,000	2		Re-sawing.	
San Bernardino			2	3	9,200	4,120	4		3,000,000	900,500
San Diego	1	3	1	1	3,500	450	2		913,000	
San Francisco	12	53			469,925	3,570	8		24,200,000	
San Joaquin	4	14			87,120	5,250				
San Luis Obispo			2	4	3,260	19,260	2		1,468,900	100
San Mateo	1	2	1	2	3,000	50	14	3	6,000,000	150,000,000
Santa Barbara										
Santa Clara	8	24	3	8	323,000	2,760	3	4	9,000,000	850,000
Santa Cruz	2	5	3	6	15,500	2,760	17	9	24,050,000	20,600,000
Shasta										
Sierra			1	1	62		9	12	5,140,000	190,000
Siskiyou	2	3	7	10	26,200	1,980	3	10	4,600,000	1,120,000
Solano	3	13			9,764	1,000	1	1	Re-sawing.	
Sonoma	4	6	4	5	50,500	4,720	15	1	7,650,000	4,200,000
Stanislaus	1	3	1	4	19,000	6,000				
Sutter										
Tehama			4	12	35,000	1,500	2	3	3,000,000	200,000
Trinity			1	2	1,210	50		15	1,690,452	45,000
Tulare	1	2	2	5	7,798	5,300	3	2	3,500,000	1,000,000
Tuolumne										
Yolo	2	5	1	2	350,000	360	1		600,000	
Yuba	3	12	1	2	54,000	16,000	9	5	4,600,000	1,000,000
Totals	73	229	70	127	2,009,577	239,181	226	117	271,446,352	240,825,100

TABLE OF STATISTICS—Continued.

COUNTIES.	QUARTZ MILLS.		MINING DITCHES.			IRRIGATING DITCHES.		WOOLLEN MILLS.		COTTON MILLS.		COAL.	RAILROADS	
	Number.....	Tons crushed.....	Number.....	Miles in length.	Amount of water used per day—inches.....	Number.....	Acres irrigated.	Number.....	Pounds of wool used.....	Number.....	Pounds of cotton used.....	Tons mined.....	Number.....	Miles in length.
Alameda													4	90¼
Alpine	4	100				1	500							
Amador	27	70,360	32	405	5,450	20	640					3,000	1	½
Butte	18	8,000	32	190	41,000	42	2,200						2	52
Calaveras	28	130,060	19	515	5,800	27	315							
Colusa														
Contra Costa												124,000	2	13
Del Norte			30	112	8,912	4	35						1	1
El Dorado	44	21,645	58	966	9,450	58	1,966						1	12¾
Fresno	2					1	500							
Humboldt													1	2
Inyo	4	600	1	3	40	10	1,000							
Kern	11	500	2	5	1,728	3	1,200							
Klamath	4	6,000	80	90	16,000	10	800						2	2
Lake						1	1,000							
Lassen														
Los Angeles	2	5,500	3	25	800	50	17,000						1	20½
Marin														
Mariposa	34	24,000	10	66	Unknown.	60	210							
Mendocino														

Merced						4	2,300	1					2	46
Mono	5	330	2	13	720	14	3,000						1	13¼
Monterey													1	112
Napa														
Nevada	60	190,000	70	946	42,400	6	900						3	62½
Placer	14	5,000	10	302	14,000									
Plumas														
Sacramento			2	45	4,000			1					2	40
San Bernardino	1		2	5	500	40	9,200						3	61¾
San Diego	2	900												
San Francisco								3	1,300,000				1	25
San Joaquin						2	4,000	1	Incomplete.					
San Luis Obispo													4	60¾
San Mateo														
Santa Barbara														
Santa Clara						43	765	2	425,000				2	43⅝
Santa Cruz													1	3½
Shasta														
Sierra	21	31,000	49	208	21,000	19	320						2	34
Siskiyou	3	270	24	290	5,010	170	6,080							
Solano													1	7
Sonoma			1	7	160	41	700							
Stanislaus			116	340	45,773	76	857							
Sutter			3	12	1,000	10	200						2	34
Tehama			1	7	160	41	700							
Trinity			116	340	45,773	76	857							
Tulare	2					20	2,000							
Tuolumne														
Yolo						2	10						1	32
Yuba	4	2,000	18	69	4,500	22	575	1	350,000				3	28¼
Totals	290	496,265	564	4,614	228,243	751	58,273	9	2,075,000			127,000	47	756⅝

TABLE OF STATISTICS—Continued.

COUNTIES.	ASSESSED VALUE OF PROPERTY.				Estimated tot'l population.....	Registered Voters.....	Poll Tax collected.....
	Real estate.	Improvements.....	Personal property..	Total valuation.....			
Alameda	$8,089,150	$1,532,560	$2,164,671	$11,786,381	24,000	4,200	$7,402
Alpine	220,860	With real estate.	130,869	351,729	686	279	250
Amador	1,562,284	280,560	528,420	2,371,264	11,340	3,640	2,340
Butte*	654,513	301,841	1,658,035	2,614,389	14,609	2,943	5,236
Calaveras	558,741	With real estate.	527,106	1,085,847	8,845	1,929	2,810
Colusa*	1,897,556	With real estate.	2,014,934	3,912,490	6,000	2,003	1,000
Contra Costa	1,817,621	589,493	1,118,964	3,526,078	10,000	2,398	2,240
Del Norte	119,902	82,924	283,763	486,599	1,500	436	1,063
El Dorado	276,190	807,147	1,183,837	2,267,674	10,500	2,985	5,152
Fresno	1,619,596	86,715	1,307,297	3,013,608	3,200	758	552
Humboldt	594,415	430,645	1,090,170	2,115,230	8,000	1,749	2,307
Inyo	69,436	95,510	185,746	350,692	1,200	300	446
Kern	653,190	104,251	1,249,005	2,006,446	2,000	849	526
Klamath	155,637	With real estate.	244,187	399,824	3,000	407	1,168
Lake	277,947	246,649	372,491	897,087	3,100	900	438
Lassen	185,915	With real estate.	385,441	571,356	1,300	330	285
Los Angeles	3,711,055	With real estate.	2,086,116	5,797,171	16,000	3,820	2,980
Marin*	1,797,193	With real estate.	920,410	2,717,603	6,900	1,335	2,546
Mariposa	194,870	437,480	525,563	1,157,913	6,000	2,100	1,962
Mendocino	497,287	176,587	1,562,890	2,236,764	10,000	1,800	2,100
Merced	1,032,818	With real estate.	163,988	1,106,806	2,820	817	558
Mono	39,410	65,450	211,636	316,496	500	225	206
Monterey	2,138,346	282,970	1,253,134	3,674,450	9,840	2,649	2,493

Napa	2,849,175	With real estate.	1,178,449	4,027,624	10,000	2,077	2,370
Nevada	3,451,913	With real estate.	2,409,152	5,861,065	20,000	6,952	4,050
Placer	1,834,748	With real estate.	1,645,460	3,480,208	11,500	6,028	6,968
Plumas*	612,138	With real estate.	589,692	1,201,830	5,000	1,175	
Sacramento	5,718,275	603,590	4,851,839	11,173,704	32,000	6,000	10,500
San Bernardino	703,301	19,332	474,637	1,197,270	6,800	1,381	518
San Diego	1,271,937	With real estate.	971,818	2,243,755	5,000	875	60
San Francisco	72,000,500	With real estate.	29,587,989	102,087,989	150,000	37,037	
San Joaquin	3,465,280	1,900,780	2,476,710	7,842,770	25,000	5,013	3,484
San Luis Obispo	1,249,865	208,510	897,230	2,355,605	5,600	1,352	365
San Mateo	1,579,941	19,040	343,050	1,942,031	6,000	1,446	801
Santa Barbara	841,868	With real estate.	626,267	1,468,135	6,000	1,347	660
Santa Clara	5,874,450	2,926,700	3,039,138	11,840,288	25,000	6,374	9,000
Santa Cruz	1,284,850	791,205	809,370	2,885,425	8,780	2,361	2,884
Shasta†							
Sierra	762,395	290,185	647,492	2,000,072	5,800	2,280	3,680
Siskiyou	385,223	With real estate.	1,365,095	1,750,318	6,842	2,480	
Solano	2,986,482	1,324,327	1,803,813	6,114,622	21,000	4,087	4,529
Sonoma	4,112,208	164,100	2,268,757	6,545,067	22,000	5,350	6,828
Stanislaus	1,619,000	404,000	1,181,761	3,204,761	6,500	1,600	2,246
Sutter	1,112,434	358,913	934,948	2,406,295	5,300	1,525	1,494
Tehama	559,057	With pers. prpty.	1,499,380	2,058,437		900	3,000
Trinity	60,795	184,210	340,000	585,005	3,250	860	1,000
Tulare	1,545,418	With real estate.	1,908,209	3,453,627	10,000	1,780	780
Tuolumne*	625,079	With real estate.	552,170	1,177,249	8,500	2,117	1,958
Yolo	1,946,434	590,470	2,041,241	4,578,145	15,360	3,841	4,200
Yuba	860,645	1,353,470	1,852,040	4,066,155	10,831	3,313	4,429
Totals	$147,976,843	$16,660,114	$87,764,380	$252,401,337	594,003	147,443	$121,864

* Taken from last year's report; no report received this year.
† No report last year; no report this year. This county should elect better Assessors.

TRANSACTIONS

OF THE

STATE AGRICULTURAL SOCIETY

FOR

THE YEAR 1871.

STATE BOARD OF AGRICULTURE FOR 1871.

PRESIDENT.

CHARLES F. REED.....Grafton, Yolo County.

DIRECTORS.

C. T. WHEELER.....Sacramento.
EDGAR MILLS.....Sacramento.
ROBERT HAMILTON.....Sacramento.
C. YOUNGER.....San José.
H. R. COVEY.....San Francisco.
R. S. CAREY.....Yolo.
WILLIAM BLANDING.....San Francisco.
E. J. LEWIS.....Tehama.
WILLIAM P. COLEMAN.....Sacramento.

OFFICERS OF THE BOARD.

Secretary.....ROBERT BECK, Sacramento.
Corresponding Secretary.....I. N. HOAG, Yolo.
Treasurer.....R. T. BROWN, Sacramento.

OPENING ADDRESS.

DELIVERED BEFORE THE STATE AGRICULTURAL SOCIETY, SEPTEMBER NINETEENTH, EIGHTEEN HUNDRED AND SEVENTY-ONE.

By CHAS. F. REED, President.

Gentlemen of the State Agricultural Society, Friends and Fellow Citizens:

The return of our great annual festival again calls for an account of a year's stewardship. Your partiality has called me to this important position for the eighth successive year, and the labors of that year are fast hastening to a close.

At this time, and from me, you will not expect any learned discussion upon the philosophy or abstract principles of agriculture. Nor even will you expect any considerable amount of suggestion or instruction pertaining to the future of your work as cultivators of the soil and improvers of the State. These things will be ably presented to you in the annual address soon to be delivered by a gentleman who once presided over your body with great success, and is eminently fitted, by long and large experience, to treat the subject in a most satisfactory manner.

From me you will expect only an account of our year's progress; and this I propose to give you very briefly and in plain phrase.

At the time of our annual meeting, in January last, fearful forebodings of disastrous drought oppressively rested upon us all—forebodings which a season of unparalleled scarcity of rain has since fully justified.

Through large districts of our State the rainfall for the entire year has not been sufficient to mature a kernel of grain or pound of hay—not sufficient to keep from actual starvation large numbers of the various classes of stock—not sufficient to keep the population of the State, as a whole, from large decline in means and in courage. In such a state of things it has not been surprising that large numbers of our culturists and our artisans have sought new homes in our sister States and Territories to the north, where they could find rains more regular, and the hopes of steady accumulation more sure.

Thus, while our fields were barren, our cattle and horses and sheep vainly roaming in search of food; our laborers out of employment, our

artisans unpatronized, our merchants destitute of custom, and multitudes of our people leaving us for scenes of richer promise, the work of getting up an annual Fair, though presenting many forbidding aspects, was entered upon, a few months since, with an unusual fullness of determination to make it a success—and for my associates I can truly say, men never wrought with better will, nor more firmly faced a foe.

With no money in our hands, and the whole people groaning under misfortune, we increased both the size and number of purses and premiums for every class of industry and production within the legitimate sphere of our organization. We enlarged the accommodations of the Park for all classes of stock, and the conveniences for exhibitors and spectators. We largely improved both halls of the Pavilion and added several new and important features. All this was done under the impression that our people are at all times equal to any legitimate emergency. How this impression was justified is evinced by the results already manifest. Let us look, for a moment, at some of them.

To pass by, with only a glance, the show of native woods, and the furniture made therefrom, either of which would endure favorable comparison with any other, in any part of the world; and the native products of the grape, in their sparkling beauty and varied forms of excellence, and the display of fruits, which most necessarily suffer largely from the year of drought, I beg to call especial attention to the most numerous exhibition this Society has ever seen of that great invention—

> The joy of every wife and mother,
> Her pride, and glory, too;
> A greater balm than any other,
> For woman's weary woe,

The sewing machine. Well knowing that the final triumph of industry in California depends largely upon the multiplication and general use of labor saving machinery, we ventured the expense of preparation for an unusual display in this department, which saves so much labor where time and strength are most precious, and toil most exhausting and costly. And even the large preparations we made have proved insufficient for the ready and hearty response to our invitation. We have found it utterly impossible to furnish the required space.

Nor has utility absorbed all, or even taken the lead. It is only a few years since a small upper room, on the rear of the corridor, was ample for the display of all art work offered for exhibition. Last year the entire north wall of the main building was thus appropriated, and the department of fine arts became, and continued to the closing hour of the Fair, a marked feature. And as one direct result of that exhibition, a young artist, with skill, but no fame, who for years had wrought, with unrequited diligence, often hearing "the wolf at the door," tremblingly hung his work upon yonder wall, and before the close of the Fair received orders for important work, which have continued to flow in from that day to this, giving him constant and remunerative employment and establishing for him a reputation, paving with gold all his future path of life. This department—much larger last year than ever before—has been so largely patronized, that instead of one hundred feet of wall space, there was asked for, ten days ago, one hundred and seventy-five feet, and we now have filled a gallery two hundred and eighty feet long, and that, too, with works many of which would be coveted by and richly grace the finest palace in an European home of art.

Here, too, is a music show, which, for the extent of its display and the elegance of its instruments, is entirely without a rival in our history, and would be an honor to any Fair held in our land.

We have also an unparalleled exhibition of furniture, manufactured within our own State, from material grown on our own soil; while the display of California manufactured vehicles would compare favorably with the best seen anywhere.

But further than this, there have come "wise men from the East" to show us the fruits of their skill and industry. The empire of Japan has stretched out her hand, laden with the elegant products of her industry, across a watery waste of ten thousand miles, and looks you in the face from the post of honor this evening; and surely, after an impartial examination of this magnificent display, no intelligent mind can despise the civilization of the Japanese.

We have also instituted a system of exchanges with more than twenty of kindred institutions in the older States—sending them supplies of our fruits and grains, and in return receiving theirs, which are now before you in this building. Thus, while this course, and the throwing of our competition open to all North America, has given us a national character, and the proffer of Eastern Asiatic nations to enter the arena with us, an international character—and this, with our peculiarly fortunate location, will in a short time render our exhibition more cosmopolitan in character than any other of the kind held on the globe.

We have also added, at considerable expense of time and labor, another entirely new feature, a living floral garden. This has been so successfully arranged and supervised by one of the Society's oldest servants and best friends, that it cannot fail to be an object of deep interest to every lover of the harmonious combination of Nature and Art who may attend the Fair. Nay, I should not wonder if its fragrant bowers and moss covered seats witnessed more than one solution of the problem, how can two be only one?

But time forbids my specifying here.

I propose a trip to the Park. And as most of us have drunk the cup and eaten the crust and slept in the blanket of pioneer toils, a little reminiscence, by the way, may not be out of place.

Though last week we were merchants and statesmen, lawyers and physicians, preachers and politicians, Eastern men and Western men, Northern men and Southern men, Republicans and Democrats, Catholics and Protestants, Jews and Mahomedans, with characteristics as diverse as the forms of our features or the shades of our faith, yet this week here we meet on common grounds—we are all agriculturists, believing in Agricultural Fairs, and loving such of their fruits as hot rolls and fried chicken, roast beef and plum pudding, warm blankets and 2:40 teams.

But really, why so much ado about agriculture? The culturist is a staid, sober, candid man, not full of form and ceremony, nor yet of shouts and enthusiasm.

His golden harvest fields, his bleating flocks, and lowing herds, and prancing steeds, and flowing vines all inspire him with emotions holier than mirth, more dignified than enthusiasm.

And yet, at his success the world is full of joy. In this success the soldier sees the guarantee of fuller, fresher rations, the merchant of enlarged commerce, and the epicure of more richly laden sideboards. In this success every laborious profession, every honest calling, every

laudable department of human effort, is certain to share. "As the farmer thrives so the whole world lives."

These annual gatherings of the great multitude of our culturists, each laden with the year's experience in his own particular sphere, ready to cast it into the lap of all the others, strikingly remind us of those good old times when they "had all things in common." They literally enable each of an hundred men to learn all that the others know of experiments tried and theories demonstrated; which knowledge, thus diffused, constitutes a system of practical education second to none ever instituted for the instruction of man.

In this gathering, also, the various departments present the choicest specimens of their purest bloods—an exhibition of which any State or nation might be justly proud; horses, such as well might cause a monarch to exclaim, "My kingdom for a horse" like this; bulls more noble than those of Bashan; cows richer than those that went lowing with the ark of God from Ekron to Beth-Shemeth; sheep of finer fleece than the vales of Cashmere ever grew; and machines such as the world never saw before.

Machines have been recently invented and manufactured in this State, each of which, with only three men and a team, is capable of cutting, thrashing, cleaning, and sacking thirty acres of wheat per day that will yield forty bushels per acre.

And such machines are needed in a country where a single proprietor has a single wheat field containing sixty thousand acres. Twenty-five square miles in a single patch of grain! Why, this man alone would need half a score of these machines, and even then it would take him two solid months to gather his harvest.

But how did he put in such a crop? With his gang plows and chisel cultivators, to be sure! By old-fashioned means, had he set ten teams at work, and thus put in twenty acres per day, it would have taken him two and a half years to do his seeding; and by the corresponding means of harvest—the cradle, the rake, and the band—the same ten men would have been more than five years harvesting it.

The manufacture and use of the best labor-saving machines are absolutely necessary to successful farming on a large scale.

We, the producers of this State, have not met here to canvass political issues or discuss theological science—to unravel the vexed question of international immigration, or to inveigh against the squandering of our public domain—to theorize upon human equality or contemplate the glories of annexing the whole continent to our nation; hence it is not in place—would be impertinent—for me to occupy your time with adroitly framed arguments in favor of or against a hard money or a paper currency. These things might tickle the fancy of bankers and brokers, and inspire enthusiasts with visions of a country made rich in specie by a liberal use of greenbacks; but it would be no more in place than a Coroner's jury in a ball room, or the performance of an opera in a Quaker meeting.

As we entertain errors we multiply hazards; and as we correct them, we multiply the means of success. And yet errors, radical errors, are common among us, very. One of these is that the railroad communications in a country interfere with one of the prominent interests of our society—stock raising. Now this is by no means true—they actually facilitate it, and the philosophy of this apparent paradox is this: vast quantities of fertile and easily cultivated land are so remote from market that when transportation depends upon team wagons, the cost of freight

is a positive bar to successful husbandry. Hence such lands either lie entirely waste or are claimed and occupied by people who erect a cabin, milk a cow or a goat once a day, plant a patch of corn and squashes to be shared in common by an equal number of squalid urchins and grunting specimens of embryo bacon; raise a few chickens to supply omelets and egg-nogs, and an occasional four-legged calf with which to grace the return of a prodigal two-legged one, and a donkey or a mule to pack a grist to mill and his owner to town on election day to hear the news once a year.

In such a state of things there is absolutely no demand, no use for good stock, and very little for any sort. But build and stock and work a good railroad through such a district of country, and you have comparatively brought the metropolis, with its ever increasing demands and upward tending prices and cash payments, to every door. Now, these waste places are called upon for holiday poultry and breakfast steaks and dinner roasts, and vegetables and fruits to the extent they have never dreamed of; and under the influence they awake to the propriety and profit of enlarging their operations, cultivating their lands and securing to themselves some of the good things of this life as they pass through it. Now, their butter and their cheese, their bacon and their beef, find buyers at their own doors. Now, the price of grain at the depot warrants the running of a score of gang plows, calling for half a hundred pairs of animals. And the farmer, thus waked up by the locomotive whistle, will not be slow to observe the advantage of blooded Devon steers at the plow, whose elevated heads and elastic step and all day endurance give him a hundred per cent more work than the best of scrubs, while it actually costs him less to keep and manage them; and of blooded horses, whose action and bottom give him twice the distance in an hour, whether at the plow or on the road, that he can safely get from the slow molded, quickly exhausted, common horse of the country.

And now how changed the scene! The donkey, between the splintered shafts of his rickety cart, gives place to a pair of roadsters and a phæton; the broad expanse, grimmed with gastly desolation, becomes a fertile plain, waving with a golden harvest; plows and harrows and reapers and mowers and thrashers and cleaners, each in season, and in its place, adds life to the view and zest to the scene, until the whole year becomes a gala day of active, exciting, productive industry. The farmer, no longer a drudge and a drone, perches himself upon the elevated seat of his improved implements and with absolute comfort rides through the work of the year.

And of stock, if any land on earth can produce good stock, it is this.

I know it has been said of sheep that the finer grades deteriorate, grow coarser here. But our Flints and McConnells and Websters have demonstrated the error of this, and now show us specimens of the sixth and eighth generations, actual improvements upon the imported parents. Surely our Walshes, Emersons, Swezys, Roses, and Youngers have shown us that the noble Durham here attains a size and form equal to the best in the world, and the elegant Devon color, and symmetry, and power, and endurance in the yoke second to none, while the magnificent Alderneys fill longer buckets and require larger churns and more powerful presses than in any other land on earth.

I also beg to call attention to a new California invention for the making and refining of brandies from the grape in so brief a time and in such a state of perfection as to render this important department remunerative, instead of ruinous, as it has heretofore been. There is already a large

and flourishing institution established upon a firm basis in this city, which will give employment to a large number of men and a free market for an unlimited quantity of grapes, which might otherwise be a drug on the hands of the grower.

And right here, lest I forget it in a more appropriate place, I propose to say what would make my own ears tingle, and I fear unduly excite me, should I hear it said by any other than a Californian, viz: that it is a shame—a disgrace—a burning sarcasm upon the intelligence, and industry, and financial common sense of California agriculturists, that in such a country, where dairy products might be more abundant and secured at less expense than anywhere else in the land, so many sit down and fold their hands, or roam from place to place looking for "situations" behind the counter, where they may sell tape and calico to lady shoppers, or in some counting room, where they may play second fiddle to an assistant bookkeeper's clerk, while we pay for the making and bringing three thousand miles a hundred tons of butter a week—and all this while tens of thousands of acres of as good dairy lands as ever lay outdoor, and as many lowing herds of the best dairy kine unite in calling you young men to marry wives and milk the cows and make the butter and get the money for your purse. If you have no capital, take a farm, as the old folks say, "on shears," and my word for it the clippings of those "shears" will, the first year, enable you to begin to buy, begin to breed, begin to multiply your stock, begin to be an employer, an independent, influential member of society, and a benefactor of the State.

But I must haste to the point I have put off as long as possible! I cannot escape it. I must "talk horse" *just a little.*

We want horses—the best of horses—horses of pure blood and easy pace and speedy trot and long endurance.

When Pope was defeated, and Banks, ignorant of the fact, was marching his gallant band into the very jaws of death, and to save them all from utter ruin, Baker, the successor of two who had failed in the attempt, must ride knee deep in Virginia mud, through a pelting storm, a hundred and twenty-four miles in twenty-one consecutive hours, to carry dispatches from the War Department to Banks, what if there had been no thoroughbred at his service? Or, what if after the first twenty-four miles, and no relay could be found in all McDowell's corps equal to the task—the horse had been a scrub, or a half-breed, would he have resumed and completed the enormous task? Or, when gaunt with ninety-five miles of fasting and foaming he was put to the task of carrying his rider through a gap, only twenty yards wide, in a battalion of the enemy's infantry flanked by a hundred of Virginia's best-mounted cavalry, all ready to shower him with bullets—would he have shot through that opening like an arrow, with his rider hugging the side of his neck, and then carried him thirty-five miles further, outstripping those fresh cavalry chargers, if there had been one drop of cold or impure blood in his veins? Never! Such ordeals are never passed, such triumphs never won, but by pure blood and careful training.

And yet of the pure blood and distinct races of the horse there is, perhaps, among the American people, less knowledge and more humbug than upon any other equally important subject. While we have at least half a dozen distinct varieties of first-rate horses, we pass them by as only "common Canestoga, or Canadian, or Norman, or pacer," and yet talk, with a great show of learning, about the "English cart horse, the English dray horse, the Cleveland Bay, the Suffolk Punch," etc., which

are about as real existences as was Barnum's mermaid, or Mrs. Tom Thumb's baby.

If we talk horse we may make England, and not America, our theme. While the truth is, that in our country good horses, like good education, are common among the people, and not, as in Europe, confined to princes and nobles. Here, every man, old and young, with his thousand a year, must have his fast nag. And yet where is the man that really knows how to manage a horse properly after he is broken and bitted?

And yet genuine, refined horsemanship needs cultivating in our midst, until our youth, both male and female, can

> "Rise from the ground like feathered Mercury,
> And vault with such ease into the saddle
> As if an angel dropp'd down from the clouds
> To turn and wind a fiery Pegasus,
> And witch the world with noble horsemanship."

Instead of this it seems the hight of our ambition to so train our horse as to reach the greatest speed and bottom, without reference to such manner as will secure ease to his reinsman or backer and economy of power to himself. How seldom do we meet a buyer who looks for education in his purchase—a mouth that feels and yields to a feather's weight on the rein, and the right foot foremost in the lope—an elevated crest, and a chin to his chest. And how few would find it if they did seek it, and fewer still would know it when they found it.

A pure blooded, well educated horse, in the hands of an accomplished horseman, whether in the harness or the saddle, or the plow or the wagon, on the road or on the track (aside from "the human form divine") is the finest, grandest, noblest creation of the earth.

To raise and train and prove a horse of purest blood and vast endurance is one of the noblest occupations of man. To hold the reins and see him go, and mark his time, is one of the most exhilarating recreations.

I tender to you a hearty welcome to our Fair, and congratulate you—yea, I congratulate the whole people—on the auspicious opening of this Fair. May every day of its continuance be full of joy to all, and its close a season of mutual regrets that we could not bathe in its waters, and bask in its sunlight, and recline in its bowers forever.

ANNUAL ADDRESS.

DELIVERED BEFORE THE STATE AGRICULTURAL SOCIETY, SEPTEMBER TWENTY-SECOND, EIGHTEEN HUNDRED AND SEVENTY-ONE.

BY T. G. PHELPS.

Mr. President, Members of the State Agricultural Society, and Ladies and Gentlemen:

Another year, with its changing seasons of seed time, flowers and harvest, has rolled its busy round, and we have met together again for the annual display of the products of our skill and labor, that each may learn from all the others whatever experience has taught, or skill or inventive genius may have developed during the year, which may be of general or partial utility in the future, whether it be in the cultivation of the soil, the enlarging of the variety of our marketable crops, the adaptation to our wants of new or better perfected labor saving machinery, or in the improvement of our herds and folds. How much we learn from each other from these annual convocations is shown by the great variety and fine quality of the exhibit here made of the productions of the farm, the orchard, the vineyard, and by the great variety and superior quality of the thoroughbred and judiciously graded domestic animals I have seen in your stalls, and the quantity of meritorious labor saving machinery on exhibition here, on which ingenuity seems to have exhausted skill, and perfection in many instances to have been reached.

What kind of success would that husbandman meet with who would confine himself to the use of the very best appliances of twenty-five years ago? Plowing with a cast iron plow of inferior mold, reaping with a sickle, and thrashing with a flail? In that brief period we have passed from the cast iron plow to the steel gang, from the sickle to the header, and from the flail to the steam power and horse forks. The next advanced step will be to steam plows and steam harvesters. Eminent success in the present advanced and rapidly advancing age can only be obtained by the farmer by raising the best crops, the most of them, and at the lowest cost, without deterioration of his soil—his future reliance as the source of his future productions. Here we learn from each other's experience how to attain the former and avoid the latter.

These annual gatherings are not only necessary to the prosperity of individuals, but equally so to the prosperity of communities and States. In our agricultural productions, we are, in this age of steamboats and railroads, in open competition with the civilized world. We need, therefore, the most approved appliances of husbandry and the ripest experience

of the practical and scientific. We have many advantages in our favor, and some very great disadvantages and embarrassments to contend with. These must all be summed up and fully understood, and then we must prepare ourselves for successful competition. On this our individual future, and the future of our State, depends. We can and we must achieve success. In this connection I have some practical suggestions to make, which may or may not be worthy of your consideration, and which you will accept or reject, as your greater wisdom and experience may dictate. I make them with the hope they may elicit discussion, through which important facts may be evolved and correct theories established.

Looking to the future of California, nothing strikes me as so important as the furnishing of employment to all our people. That country is growing rich or poor, advancing or retrograding, not in proportion to the nominal rates of wages allowed its laboring men, but more nearly in proportion to the regularity of their employment.

While we in California maintain, perhaps, the highest rates of wages of any country under the sun, it is a fact as patent and undeniable as it is lamentable that the average earnings of our working men are not correspondingly great, because we have a large idle population, and this, too, in the infancy of all our enterprises, with a broader field open to the laboring man, in farming, mining, manufacturing, and mechanical pursuits, than ever before tempted men to industry. In this there is something radically wrong, which must be radically changed. Hands should not be without labor while the golden harvest invites them to the field. The causes which have led to this condition of things are various, and have grown out of our past and present surroundings. Many old Californians are too restless, and too much occupied with the golden dreams and visions of the past, to settle down to any steady or safe employment. If they would build themselves houses they might at least be surrounded with every comfort. The next most serious hindrance to our prosperity is the tendency of our people to drift into our large towns and cities. This disposition is not only manifested by the people of California, but of the whole country, and must be regarded as one of the most evil tendencies of the age. One fourth of the population of this State to-day resides in the City of San Francisco, and one fourth of the balance in the six or seven next largest cities of the State. Rural life is fast losing its charm for our people, who are exchanging their quiet homes and simple habits, the pure air and pleasant scenery of the country, for rented rooms amid the restless confusion of city life.

This is greatly to be regretted. While a few in cities attain great wealth and opulence, it is to the yeomanry of the country a State must always look for its development and sources of wealth. A busy, thriving country population may maintain large cities in the commercial exchange of its products, but large cities can never maintain the country. Cities, as a rule, absorb more of wealth than they create. The surplus population of our cities must be employed in manufacturing and mechanical enterprises. This can and should be done, though large cities are by no means the proper places for carrying on manufacturing enterprises, for the reason it costs the operatives much more to live, which must be added to the cost of the product of their labor, and there are no corresponding advantages. Yet a diversified industry is not only desirable, but necessary to our prosperity. The manufacturer is no less important than the farmer. These industries must go hand in hand. That State is in the best condition which most nearly supplies its own wants, and sells its surplus in the most valuable and marketable shape.

There is no more mistaken policy than that which would compel our people to become producers of raw material only. This course would render us large sellers, it is true, but it would also render us equally large buyers, making us dependent upon the fluctuations of foreign markets instead of the stability of our own. The early history of California is sufficient to convince any one of the correctness of these views. Then we produced largely a material which is the standard of all values the world over, but were compelled to rely upon the other States and countries for all the necessaries of life. What was the result? Just what might have been expected. The profits were made by those who furnished the supplies. California gold has built more palaces on the Hudson than on the Sacramento, more mansions in New York and Boston than in San Francisco. We are now, with all our complaints of dry seasons and hard times, gaining in material wealth faster than we were fifteen years ago. The experience of every country which has confined itself to a single industry, however important, has been the same. The history of the Southern States up to the time of the late war furnished a most striking illustration. The people of those States, having control of a soil of unsurpassed richness, and favored by a temperate climate, availing themselves of a cheap servile labor, directed their main attention to growing cotton for export. Their product was in great demand, and they virtually controlled the market. Their exports were enormous; but did they increase in wealth and general prosperity? No—not in comparison to other less favored sections maintaining mixed industries. New England, with her sterile soil and bleak hills, far outstripped them in the accumulation of wealth, the average comfort of her people, and the general diffusion of knowledge. It is unnecessary to enlarge upon this point, as it is generally very well understood. It becomes a matter of interest, then, to inquire what progress we are making towards supplying our own wants. In other words, how independent have we become, through our own industries, of the people of other countries? That we have made fair progress in manufacturing, considering the circumstances which have surrounded us, is probably true. We have many manufacturing enterprises of which not only those engaged in them, but the State, may well be proud. But should we be content with what we have done? By no means. We now ship away seven or eight million dollars' worth of wool. This wool, manufactured, would sell for twenty millions, at least. Why, when we have idle labor, should not this value be added to it? We export hides, import boots, shoes, and harness. We export timber and import furniture, and yet we have the finest woods for furniture on this coast to be found in the world. We export wheat and import agricultural machinery; and so on through the whole catalogue, and this, too, in the face of the fact that men are importunate for the opportunity to labor. This is a wrong to the poor, who should be encouraged to add, by their industry, to their own comfort and the wealth of the State.

Let every effort be made to foster and encourage manufacturing interests of every sort, in every part of the State. Let them have the protection they need to nurse them into life and full growth. To extend this to them is no less the interest of the farmer and mechanic than the manufacturer, so intimately blended are all these interests. The man who can successfully establish a manufacturing enterprise, however small, is a public benefactor, and should be honored as such.

These industries have been greatly checked, no doubt, by the differences which have arisen between the employers and the employed

relative to the rates of wages and the hours of labor, or what many are pleased to call the antagonism between labor and capital. There seems to be but one way out of this difficulty, and that is through individual enterprise, where that is practicable, and where it is not, the combination of the capital of the operators in coöperative organizations. It would seem that these associations should give to operatives exactly what they earn, and leave them free, without let or hindrance, to fix the hours of toil to suit their own convenience and interests. As nothing seems to stand in the way of their formation, it is surprising they have not been more generally resorted to. One thing is certain, it is every man's duty to himself, to his family, and to society, to be as independent as possible of all others in the control of his labor, and in reaping all the fruits therefrom.

Who can contemplate a life less interesting, more perfectly bereft of every ambitious hope of improved condition, than one spent as a journeyman mechanic, or as an operative in a manufacturing establishment? In such a life the ordinary stimulus which impels men to action is wanting, and it is not surprising, therefore, that men become restless and complaining. Every man who employs himself will find that he is his own best paymaster, and with himself he will never have any disputes about rates of pay or hours of labor, nor will he be ordered by his society to strike, and as a consequence see his family starve, while he remains unemployed. If men cannot control their own labor in our cities, how much better than idleness, or at least the uncertainty of employment, would be a farm in the country. Here at least all can place themselves above want, if they will depend upon their own labor and not make farming a hazardous speculation. But many will say there is no land within their reach. Is this true? The Secretary of the Interior estimates the amount of land adapted to agricultural purposes in this State to be about sixty-five million acres, and fifteen million in addition as suitable for grazing only. In eighteen hundred and sixty-five there was of this amount under fence four million fifty-five thousand six hundred and ninety acres, and under cultivation but one million five hundred and four thousand six hundred and eighty acres.

Probably there is not now more than six million acres under fence, and two million five hundred thousand under cultivation. These estimates, which are believed to be large, would show that but ten per cent of our agricultural land is yet under fence, and less than four per cent under cultivation.

This shows that there is not only room for all our people who desire to cultivate the soil, but for more than twenty times the number we now have. At first thought we are staggered by such a calculation as this; but if we take a ride from Yolo County to the north line of the State, and from the Stanislaus to the Colorado River, or, if we spread before us the map of California, and pencil off that portion of the State which is now actually occupied by the agriculturist, we shall see the estimate is a true one, and that the amount of land actually cultivated contrasts with the area of the State as an ordinary garden does to a farm. Those who are interested in the future of the State should use all their influence to have this vast unoccupied domain held for those who are to cultivate it. It is believed by men of enlarged views that the true policy of the Federal Government is to withdraw from sale all its public lands, and hold them as the free heritage of the poor under

the homestead law. The wealth of a State is made up of the aggregate wealth of its citizens; its growth in wealth depends upon their aggregate earnings. True economy therefore dictates the placing of every man in a position to add to the wealth of the State by his industry. How can so good a disposition of our public domain be made, therefore, as to give it to the poor, and thereby enable them to become producers who might otherwise be a tax upon the energies of others. Every one hundred and sixty acres actually occupied will not only steadily increase in value, but on an average will turn off more in value each year than the price of its purchase; yet every dollar realized from it from year to year will generally be expended in the support and education of the family occupying it, and the purchase price, if the occupants be compelled to pay it, will hang over him for years, if not paralyzing his energies, at least clouding his hopes. The passage of the homestead law was a step in the right direction. Let all unite in the interest of the laboring men of the country, in the interest of an enlightened humanity, and for the common good of all, in demanding that the public domain be set apart forever as the free inheritance of our own and our immigrant poor. Let us at once demand of the next Legislature a repeal of the law whereby speculators have become possessed of large tracts of swamp and overflowed lands—the very choicest we have. Let these, too, be held, if not without price, at least for those who will cultivate them. Let it be understood no fault is to be found with those who have availed themselves of a bad law; the fault is in the law which permits them to profit off the poor, or what is more frequently the case, embarrass the poor without profit to themselves.

The system of farming hitherto followed is both wasteful and disadvantageous, but it is believed to be wholly the outgrowth of the peculiar embarrassments under which we have labored. Farmers have relied almost wholly upon a single kind of crop. This failing, they have failed. Nothing can be more risky. But it has been heretofore almost impossible for the majority to diversify their crops and combine farming with stock raising, because of the great cost of dividing up their farms with fences so as to admit of this kind of husbandry. But if we would farm profitably this must be done. Meat and bread must be grown together if we would not deteriorate our soil. This is a truth well known to our farmers, and yet one to which we have so far paid little attention. But he who so farms as to exhaust his soil makes a present profit only to insure a future loss. The farmer who grows grain and raises no stock, as too many do, wastes the profits which should be realized in the gleaning of his stubbles, in the utilizing his straw stacks—a profit equal to what farmers make in many parts of the world. The stubble and straw from a grain field, properly cared for, are worth more to the stock raiser than the natural grasses which would grow upon the same land. This shows at once the importance of combining the two interests. As fast as men can prepare themselves to carry on this better system of farming, it is to be hoped they will do so, and until then, in common justice, the obnoxious law requiring A to fence his grain field against the depredations of B's stock should be repealed. Each man should be enabled to possess his own. This policy of discriminating in favor of an inferior against a superior one is a blighting wrong, which has worked a great injury to the State.

Among the very best indications for our future prosperity are the preparations being made for irrigation in that section of the State most needing it—the San Joaquin Valley. This great valley, the most exten-

sive in area and rich in the earthy salts of any we have, is so subject to drought as to make farming exceedingly hazardous. It is time the great rivers penetrating it, which run at full banks during the season their waters are needed by the agriculturist, should be utilized. Nothing gives me such buoyant hopes for the future of this great section as the work now going on for the distribution of the waters of these rivers over the dry but rich plains, for they contain an inexhaustible source of wealth to the farmer, which cannot be estimated, but which far exceeds the value of the golden sands that once lined their banks. The San Joaquin and Tulare Valley, for it is one valley, covers an area of more than one third the size of the State of New York. But unlike New York, there is necessarily no waste land on the whole of it, while the average quality of its soil, to say nothing of its favorable climate, is equal to the very best river bottoms in that State. It is no exaggeration to say, therefore, that this valley, irrigated, as it may be, by the flowing streams nature has provided, is capable of producing a larger agricultural product than the entire State of New York, and of far greater value, because of the superior quality and greater variety of its productions. Among the productions of this great district of country, which may be marketed in the future in almost limitless quantity, are wines, brandies, cotton, and beet sugar. Americans have had little experience in irrigation, and naturally ask what will be the effect of it upon the soil. The answer is, there is no soil needing it which will not be improved by it, if properly applied, and this answer embraces the experience of the world up to the present moment. When should it be applied? For cereals, and in fact most all annuals, from October to May. If applied later, unless there is a growth of trees, alfalfa, or some other crop on the ground to shade it, it would undoubtedly be disadvantageous to light clay loams and kindred soils, causing them to become compact and hard. There is no farming land in this State which will not produce a full crop in the dryest season, if once thoroughly saturated by irrigation, in October, November, or December. From that time on the rainfall will always be sufficient to supply surface moisture, until the sun reaches altitude enough to draw up the supply held below the surface by capillary attraction. For the truth of this assertion, reference is made to a farmer in San Joaquin who flooded a part of his lands in the Winter of eighteen hundred and seventy, harvesting therefrom a full crop that year, and another in eighteen hundred and seventy-one, from the unexhausted moisture from the irrigation of the year before, while his crops on adjoining land entirely failed.

Among the first of new enterprises should be classed that of making sugar from beets. One company engaged in this business, at least, has met with very satisfactory success. I refer to the California Beet Sugar Company, whose works are located at Alvarado, in the County of Alameda. This company has in more than five hundred acres to beets, and notwithstanding the dry season, will make one and one quarter million pounds of sugar, worth in the San Francisco market not less than one hundred and fifty thousand dollars. It will be seen, therefore, that the product even in this worst of seasons we have ever known, will reach three hundred dollars per acre.

The sugar is of the finest quality, and can readily be put into any desirable shape, whether loaf, lump, crushed, granulated, or pulverized. The average annual importation of sugar into the port of San Francisco is something more than fifty million pounds, worth, duties paid, about five million dollars. This is a very considerable drain upon our wealth

and resources. To buy this amount of sugar requires the exportation, at average yield and prices, of the entire crop from more than three hundred thousand acres of wheat, while less than fifteen thousand acres would produce the sugar, with far less drain upon the soil used.

The experiment of making sugar here having proved an entire success in every particular, it is confidently predicted that in four years from to-day we will produce all the sugar consumed in the Pacific States and Territories, and in ten years we will send to other States and countries, of our own production, three times the amount we now import.

There is now quite a large amount of flax raised in this State for the seed alone, no use being made of the fiber. This is a great waste, which should, if possible, be avoided. Cannot some cheap method be devised for preparing this fiber for use, though it may be in the coarsest products, such as grain bags or rope? He who can utilize this material and prevent its waste will confer a great benefit upon the State.

One experiment, at least, upon a scale sufficiently large to test our climate and soil for raising cotton successfully, is being made. A field embracing seventy acres is now growing, on the Merced River, five or six miles below the Town of Snellings. When I had the pleasure of visiting the field, some six weeks ago, the cotton was in a very thrifty condition, with the early seedballs closed. The harvest of the fiber is probably now about commencing, and will continue until November or December. Experienced cotton growers from the Southern States informed me that this field was a fair average of the crops in Louisiana, and would probably yield three fourths of a bale of ginned cotton to the acre. The entire crop was planted and cultivated by three men. This is more ground, I am informed, than the same men could have cultivated in the Southern States. The experiment, therefore, bids fair to prove a satisfactory one, and it is quite probable we may hereafter be able to add cotton to our regular productions.

The raising of grapes and the manufacture of wine and brandy seems now to be firmly established as one of our leading and most profitable industries. There is no longer, I am informed, any difficulty in marketing the entire product at remunerative rates, and it is quite probable the demand will increase faster than the production can be increased. Last year we produced six million gallons of wine, worth three million six hundred thousand dollars, and one hundred and fifty thousand gallons of brandy, worth, duties unpaid, one hundred and twelve thousand five hundred dollars. This year it is estimated we will produce from eight million to ten million gallons of wine, worth say four million five hundred thousand dollars, and two hundred thousand gallons of brandy, worth one hundred and fifty thousand dollars, and it is fair to calculate that this ratio of increase in production and values will be kept up for years to come. It is estimated by our principal wine merchants that one half of our product is consumed by the States to the east of us, while they are regularly shipped to Mexico, South America, Sandwich Islands, Australia, Japan, China, England, and occasional lots to the continent of Europe. From every part of the world to which they are sent fair reports come back as to their excellence, and orders increase, showing that they have a better standing abroad than at home. Of course their reputation has suffered somewhat from unskilled makers, and from counterfeiting. Messrs. I. Landsberger & Co. are now putting up one thousand five hundred dozen per month of their champagne wine, and are unable to supply the demand. What may we not expect from this industry, when we reflect that the entire champagne district of France is not greater in era

than Sonoma county, and yet employs ten thousand men in cultivation of the grape, and ten thousand more in the preparation of the wine for market? We have now thirty-five million bearing vines growing on forty-seven thousand acres. The average yield per acre for the grapes is about sixty dollars, but the choice varieties will yield one hundred dollars or more, and this too on our poorest soil. What more profitable or sure investment can a poor man desire? Uncle Sam gives the land, and his own labor is sufficient to put out a vineyard from which a sure annual revenue may be derived for himself and his children. One of the strange peculiarities of our people, showing their singular attachment to articles of foreign growth and manufacture, may be noted in the fact that while we are sending wine to the four quarters of the globe—a wine that we know to be pure juice of the grape—we imported during last year four hundred and fifty-one thousand nine hundred and forty-seven gallons of wine, costing, duties paid, more than five hundred and fifty thousand dollars.

Would any other people under the sun be guilty of thus patronizing a foreign product and market at the expense of their own, and that, too, at their individual cost?

Time is not afforded me to mention other industries, both in farming and manufacturing, which at least bid fair to succeed, and which will be watched by our people with the deepest interest. In our domestic animals we are making a gradual but steady improvement. That we are taking the pains with our herds which true economy would dictate, however, cannot be contended.

There are many yet who cannot realize the fact that it costs just as much and often more to raise a poor horse or cow than it does a good one; that it costs just as much to raise a sheep which will shear three pounds of inferior wool as it does a thoroughbred Merino or Cotswold, which will yield a fleece of six pounds of superior quality.

If one will pay the cost of raising, what an enormous profit must the other yield? If I was called upon to name the class of persons who have done most to advance the best interests of the State, I should unhesitatingly say, that according to their numbers, those men who have employed their time and experience and embarked their capital in the improvement of our domestic animals are entitled to this great distinction. From the improvement already effected, I think it safe to say the value of our herds has been more than doubled. Let the improvement go on until it shall be our boast to say, California raises none but the best.

To the ladies, whose splendid exhibition makes up one of the most pleasing features of this great display of labor and skill, not being a judge of the materials so artistically arranged by their fair hands, I only feel competent to say, that for the general interest they have added to the Fair they are certainly entitled to the thanks of the Society. On the whole, we may justly claim to be making fair progress as a people. But should we be content with this? No; not so long as we have an idle man among us, or a physical want or comfort unsupplied; not so long as we are dependent upon any other country for a single article which we can produce; not so long as we have to depend upon other countries for ships to carry our surplus products away. This shipping can and must be supplied by ourselves. The world does not furnish such materials for wooden and composite ships as are found on this coast.

We have now a cheap process for preserving this wood from rot, and therefore making it as durable and even more desirable than iron. Ship building should at once become a leading industry. We have now just begun to realize something of that Oriental trade to which we have been looking forward for a long time, expecting it to add largely to our wealth, and give an impetus to all our industries. Within the last thirty days there have been received from China and Japan more than two million nine hundred and forty thousand dollars worth of merchandise for transition across the continent. This is but the beginning of a trade which will revolutionize the old currents of commerce. Within a few years San Francisco ought to become the emporium for the exchange of Oriental products and the monetary exchanges of the world. Her position commands both these, and she will some day attain to this commercial and monetary greatness. It depends upon us to say how soon that day will be reached.

We have great interests confided to our care. Let us remember that in activity there is life, and that indolence is mental and physical death.

We should be duly thankful that the great disposer of events has cast our lot in this favored land, with its genial climate, its grand scenery, its limitless productions, and its possible future, more grand, more glorious than any spot of earth upon which the sun shines. Let it be the ambition of each of us to see who shall be entitled to have his name written highest among those who have advanced the great interests of the commonwealth.

FINANCIAL REPORT

OF THE

STATE AGRICULTURAL SOCIETY

FOR

THE YEAR 1871.

Date.	On what account.	Amount.
1871.	RECEIPTS.	
January 28	From A. A. Wood, rent of Park	$305 00
"	Memberships	300 00
March 1	A. A. Wood, rent of Park	305 00
April 1	A. A. Wood, rent of Park	305 00
April 11	State appropriation, 1870	3,000 00
May 9	A. A. Wood, rent of Park	305 00
June 12	A. A. Wood, rent of Park	305 00
July 3	A. A. Wood, rent of Park	200 00
July 13	A. A. Wood, balance of month's rent	105 00
August 5	A. A. Wood, rent of Park	305 00
August 15	On warrant of State appropriation	5,000 00
"	Entrance	2,740 00
August 19	From C. B. Polhemus, entrance money	200 00
Sept. 9	A. T. Renwick, amount drawn by Society premium last Fair	20 00
"	A. A. Wood, rent of Park	240 00
Sept. 15	Chase & Bowley, pool privilege	1,750 00
Sept. 18	Membership tickets sold since last election, fifty-four, at $5 each	270 00
"	Bar privileges	105 00
"	Entrance to two-year-old race	75 00
"	Receipts at Park, per T. Hall	2,078 75
"	Receipts at Pavilion, per J. Tingman	2,459 50
"	Entrance to race, per E. Mills, at bank	930 00
Sept. 19	Receipts at Park, per T. Hall	2,227 00
"	Receipts at Pavilion, per J. Tingman	1,455 00
"	Entries to race, per E. Mills, at bank	790 00
"	Entries to race, per Beek	2,700 00

Date.	On what account.	Amount.
Sept. 20.....	At Park, per T. Hall.....	$1,802 35
"	At Pavilion, per J. Tingman.....	1,308 90
"	Entries to race, per E. Mills.....	620 00
Sept. 21.....	At Park, per T. Hall.....	2,619 17
"	At Pavilion, per J. Tingman.....	1,352 50
"	Entries to race, per E. Mills.....	740 00
Sept. 22.....	At Park, per T. Hall.....	1,751 55
"	At Pavilion, per J. Tingman.....	1,021 55
"	Entries to races, per E. Mills.....	800 00
"	E. Parsons, cider privilege.....	51 00
Sept. 23.....	At Park, per T. Hall.....	1,364 25
"	At Pavilion, per J. Tingman.....	490 50
"	Entries to races, per E. Mills.....	720 00
Sept. 29.....	From R. L. Robertson & Son, rent of feed rooms at Park.....	50 00
October 3..	Received from A. A. Wood for rent of Park.....	220 00
October 6..	Justin Gates & Bros., rent of soda privilege.....	50 00
"	G. N. Swezy, on silver pitcher of last year (over value)	25 00
"	State warrant appropriation.....	3,000 00
"	Received of Thomas Orchard, diploma frame.....	2 25
"	J. C. Devine & Co.....	5 00
"	S. I. Gregory.....	5 00
	Total.....	$44,044 27

On what account.	Amount.
DISBURSEMENTS.	
By balance overdrawn on treasury	$3,151 54
Cash paid H. C. Kirk, premium of 1870	5 00
G. W. Whitlock, fixing seats for election	4 50
H. S. Crocker & Co., Sacramento Directory	3 50
D. Bush, balance gas-fitting bill	84 35
L. Deitz, premium 1870	20 00
Ben. Bullard, Jr., Clerk election	4 00
L. Stanford, one share Union Park stock	100 00
Locke & Lavenson, door mat	3 50
Daily Record, advertising	3 00
Daily Bee, advertising	5 00
F. E. Patton, Clerk election	4 00
R. J. Merkeley, premium 1870	25 00
A. B. Gilbert, premium 1870	30 00
Telegram	1 25
Expressage on *Turf Register*	3 00
Post Office stamps	10 00
Expressage on seed	1 00
Newspapers containing report of proceedings of Board	1 00
Robert Beck's salary for February	150 00
J. E. Parker, bridle	10 00
Whittier, Fuller & Co., diploma frames	13 50
A. J. Steiner, premium 1870	50 00
C. W. Clark, one share Union Park stock	100 00
C. W. Clark, one stall at Park	7 00
Robert Allen, bill	78 00
D. Gardner, wood	10 00
E. F. Aiken, trees	193 25
Jas. T. Stratton, premium, 1870, $50; trees, $21	71 00
R. S. Carey, one share Union Park stock	100 00
T. Durkin, trimming trees	5 00
J. B. Turner, trimming trees	19 50
I. N. Hoag's bill	150 00
Robert Beck's salary, March	150 00
Hanks & Wilson, setting tanks	16 00
Central Pacific Railroad Company, four water tanks	100 00
Telegrams	1 00
Expressage on books	3 50
Wells, Fargo & Co., envelops	10 00
Postage stamps	10 00
Capital Savings Bank, for $160 currency, at 91¼, and paid assessment to Turf Congress, $80 currency, and new rules, $80 currency—$160	146 00
San Francisco *Examiner*, to send circulars	6 00
Secretary's traveling expenses during 1870	300 00
W. Williamson, Course Clerk, 1870	25 00
B. F. Hastings, one share Union Park stock	100 00

On what account.	Amount.
Rural Press, advertising	$ 6 00
E. F. Aiken, trees	10 00
A. A. Wood, for boxing and watering trees	78 75
Robert Beck, salary for April	150 00
I. N. Hoag, account of salary	200 00
City taxes on Union Park	42 75
Peter Burnes, premium 1870	5 00
A. Steiner, filling diplomas	9 75
A. A. Wood's bill	36 00
Robert Beck's salary for May	150 00
I. N. Hoag, account salary	100 00
Central Pacific Railroad Company, spout and door	6 50
Dr. Harkness, one share Union Park stock	100 00
Dr. Cluness, one share Union Park stock	100 00
Post Office bill	12 00
Gleason Brothers' bill	90 62
Hunt & Wilson's bill	90 00
Robert Beck's salary for June	150 00
A. A. Wood's bill	55 00
I. N. Hoag, on account salary	100 00
Miss J. N. Andnair, premium 1870	3 00
John A. Smith, one share Union Park stock	100 00
Robert Beck, salary for July	150 00
J. S. Harbison, premium 1870	5 00
I. N. Hoag, on account of salary	100 00
H. H. Pearson, one share Union Park stock	100 00
E. M. Smith, premium 1870	15 00
I. N. Hoag, on account salary	100 00
W. Bacon, carpenter	20 00
Dusenbury, carpenter	20 00
T. Marshall, carpenter	20 00
Todhunter, carpenter	20 00
A. Keithley, carpenter	20 00
P. Chatterton, carpenter	20 00
Insurance on building	158 50
I. N. Hoag, on salary order	32 13
H. Cooksley, masonry	20 00
I. N. Hoag, salary	114 72
Fred. Werner, sixteen stalls at eight dollars	128 00
R. T. Brown, purse No. 1	1,000 00
R. T. Brown, purse No. 2	1,000 00
R. T. Brown, purse No. 3	800 00
R. T. Brown, purse No. 4	1,500 00
R. T. Brown, purse No. 5	1,000 00
R. T. Brown, purse No. 6	1,000 00
R. T. Brown, purse No. 7	600 00
R. T. Brown, purse No. 8	1,200 00
R. T. Brown, purse two-year-olds, $100; entrance added, $75	175 00
R. T. Brown, boat purse	100 00
R. T. Brown, purse No. 9	1,000 00

On what account.	Amount.
R. T. Brown, purse No. 10	$1,500 00
R. T. Brown, purse No. 11	1,200 00
R. T. Brown, purse No. 12	750 00
R. T. Brown, special purse	50 00
R. L. Robertson & Son, feed	93 00
Booth & Co., shakes	250 00
R. Todhunter, carpenter	110 00
R. Otis, laborer	21 00
John Tenbrook, labor	36 00
F. M. Marshall, carpenter	124 00
A. Keathley, policeman, six days	18 00
A. Keathley, laborer	67 00
Isaac Galloway, labor, six days	18 00
M. T. Howard, labor, six days	33 00
W. J. Robertson, horse hire	33 00
James Casserly, horse hire	24 00
P. McGowan, policeman	18 00
Samuel Deal, policeman	24 00
John Wooster, policeman	24 00
Mrs. Jackson, chambermaid	15 00
M. Dusenberry, carpenter at Park	92 00
Orleans Hills Vinicultural Association, premium	20 00
P. Chatterton, carpenter	165 00
R. S. Carey, labor	32 50
R. S. Carey, wood	42 00
William Collins, policeman	18 00
Mrs. M. Carrington, premium	5 00
James Harvey, Marshal	33 00
R. Rockforth, police	15 00
W. M. Millard, stair keeper	18 00
H. H. Holton, stair keeper	18 00
John Studeras, premium	3 00
Mrs. N. Clark, premium	12 00
William Harron, ticket clerk	30 00
W. T. Crowell, doorkeeper	27 00
D. J. Simmons, doorkeeper	24 00
Isaac Galloway, labor	27 00
S. H. Davis, hardware bill	230 40
R. Johnson, cleaning closet at Park	40 00
Eph. Burns, labor	10 00
Central Pacific Railroad Company, tank	60 00
Miss Annie Gerber, premium	3 00
John Nickerson, police	18 00
E. G. Jefferis' bill	7 50
James Johnson, whitewashing and cleaning Pavilion	99 00
O. C. Casey's bill	4 00
S. Cotton, labor at Pavilion	33 00
G. W. Whitlock, labor	118 00
James Contell's bill	62 50
W. Cortus' bill	15 88

On what account.	Amount.
Jesse Slaughter, labor	$2 25
W. Corsaw, premium	9 00
A. A. Gurnsey, clerk	18 00
Mrs. Sago, premium	5 00
W. C. Burnham, labor	2 00
Wells, Fargo & Co., marine glass	38 00
W. B. Ludlow, carpenter, $37 50; doorkeeper, $21	58 50
T. C. May, drayage	35 75
G. T. Glover, clerk	36 00
Frankie Swift, errand boy	12 00
Mrs. T. L. Chamberlin, premium	5 00
J. J. Cass, repairing locks	3 50
Mass & Co., premium	2 50
A. H. Estill, entry clerk	30 00
Marysville *Standard*, advertising	12 00
F. Foster's bill	15 00
L. Lothhammer, music	624 00
Mrs. E. F. Aikins, premium, $84; Mrs. E. F. Aikins, premium, $17	101 00
O. W. Wallace, gatekeeper	18 00
O. C. Wheeler, Jr., labor	42 00
G. W. Mayberry, labor	83 50
M. Crome, labor	91 50
E. H. Pomroy, clerk	30 00
W. Schaumfleffle's bill	6 00
C. Honeywell, carpenter	60 00
C. L. Knowles, superintendent carpentering	117 00
A. Hamberger's bill	54 00
John Tingman, ticket clerk	30 50
John Isaacs, police	24 00
Hiram Clock, labor	92 00
E. Mills' expenses	500 00
B. Calhoun, one share Union Park stock	100 00
Phil. Fisher, premium	8 00
C. F. Reed, expenses	1,000 00
John Calvin, hauling gravel	6 00
Samuel Deal, ticket returned	5 00
P. J. Hopper, advertising	10 00
S. Dodge, boring well	59 00
R. Jones, straw	257 40
Henry Heiser, premium	3 00
W. R. Tolle, police	18 00
D. Stewart, police	18 00
A. Johnson, labor	69 00
A. H. Cram, engineer	66 00
F. Manuel, fireman	31 50
H. S. Crocker & Co., stationery, etc	289 38
E. Moore, drayage	75 50
Thomas O'Brian, display flowers	20 00
Mrs. S. Sims, premium	5 00

On what account.	Amount.
W. S. Frazier, hauling	$ 4 00
W. Crump, watchman	40 00
James Johnson, labor at Pavilion	36 00
George Duprey, board of Japanese	45 00
W. Burk, hauling	4 00
Hill & Knaugh, premium	50 00
James Anthony & Co., advertising, etc	180 50
Mrs. S. M. Hover, premium	8 00
H. S. Beals, hay	115 26
H. M. Bernard, premium	30 00
C. H. Shear, premium	65 00
Daily Record, advertising, etc	97 50
W. F. Fills, bill posting	3 00
Robert Cown, premium	10 00
Hobson & Ayers' bill	455 86
Sacramento Gas Company's bill	220 00
D. H. Quinn's bill	14 00
F. Adams, labor	15 00
Fourth Avenue House, board of Japanese	44 00
Hunt & Anderson's bill	514 91
P. A. Espina's account	50 00
A. Maillard, premium	70 00
G. Schmeiser's bill	22 14
G. H. Baker, diploma	100 00
James Carolan & Co., truck	13 25
Van Heusen & Huntoon	30 00
W. P. Michener's bill	79 42
H. Cantwell, clerk	30 00
G. H. Swinerton's bill	18 76
P. Burns, premium	15 00
W. E. Nichols' bill	12 50
O. Kuttschmitt, premium	60 00
Nash, Miller & Co., premium	5 00
E. C. Chaimbers' bill	24 00
F. A. Muller, premium	50 00
W. Sutton, police	18 00
I. N. Hoag, on account of salary	208 15
Western Union Telegraph Company	4 00
Spurgeon Bros.' bill	65 00
F. Screiver's bill	20 00
Hartwell, Hotchkiss & Co.'s bill	53 20
N. L. Drew & Co., on account	500 00
Friend & Terry, lumber	84 95
N. Clark & Co., premium	18 00
E. Soule, premium	30 00
John Smith, premium	8 00
Capt. Robinson, assistant clerk	5 00
Sacramento Reporter's bill	24 00
N. L. Drew & Co., balance of bill	817 12
J. R. Nickeson, premium	150 00

On what account.	Amount.
James Sunderland, carpenter	$24 00
Fred. MacCrellish, advertising	40 00
Henderson & Clark, premium	15 00
F. M. Chapman's bill	52 00
A. S. Grenlaw, premium	25 00
Dewey & Co., advertising	132 50
Chas. Dell, clerk	18 00
Miss J. M. Pierce, premium	3 00
Mrs. C. James, premium	3 00
John Breuner, premium	90 00
R. Woods' bill	12 00
Women's Coöperative Company, premium	18 00
Mrs. Preston's bill	15 00
J. K. Jewell, premium	10 00
A. Meiss, labor	76 00
C. Coyle	5 00
J. S. Williams, police	18 00
J. S. Williams, watchman	14 00
W. B. Ready, premium	35 00
James Perry, hauling	8 00
J. C. Sedley, doorkeeper	27 00
Alex. Mackey, premium	10 00
Leonard & Cadwalader's bill	30 00
Mrs. Anderson, premium	5 00
Gillig, Mott & Co.'s bill	4 00
Post Office bill	3 00
San Francisco *Spirit of the Times*, advertising	60 00
Robert Beck, premium	50 00
Bills and premiums paid at Pavilion, as per vouchers	2,584 00
Expenditures, as per vouchers	1,102 85
Premiums paid at Park, as per vouchers	3,255 00
William Lee, services	69 00
Thomas O'Brien, services	111 00
Daily Bee, advertising	25 25
Benjamin Bullard, Clerk	70 00
Dewey & Co., advertising	4 75
Russell & Winterburn's bill	527 50
G. G. McCurdy, services	24 00
Bean & Co., advertising	133 00
George W. Wallace	148 00
O. C. Wheeler, Superintendent	200 00
Mrs. O. C. Wheeler, purses	12 00
Dorsey & Lowry	5 00
J. C. Devine & Co.'s bill	6 25
F. S. Malone's bill	30 00
H. A. Rawson, premiums	85 00
California Stock and Poultry Association, premium	60 00
C. Detten, premium	20 00
Newhall & Culvertson	35 00
Wells, Fargo & Co., freight on fruit	61 20

On what account.	Amount.
R. T. Brown	$500 00
A. Music, premium	10 00
C. E. Paine, livery	10 00
J. Builder, police	18 00
J. C. Meussdorffer, premium	5 00
R. C. Terry & Co.'s bill	4 00
Robert Beck, salary for August, September, and October	450 00
J. Lipman & Co.'s bill	2 00
Dale & Co.'s bill	7 37
C. H. Krebs' bill	179 13
William Corliss' bill	6 00
J. R. Carroll & Co., hay	900 00
B. Dennery's bill	51 42
E. Mills, interest on Union Park stock	133 00
P. A. Espina, balance of salary	15 00
L. B. Harris, Entry Clerk	65 00
I. N. Hoag, salary	150 00
A. A. Wood's bill	143 50
B. N. Bugbey, premium	70 00
Nevada Ice Company's bill	24 60
William Caswell, posting bills	7 00
Charles J. Torbett, Clerk	30 00
Wells, Fargo & Co., freight	3 13
Huntington & Hopkins' bill	25 38
Hasselgren & Wilson's bill	10 00
Summit Ice Company's bill	11 37
I. L. Merrill's bill	59 50
H. C. Kirk & Co.'s bill	10 50
Locke & Lavenson	24 00
R. Ireland's bill	3 00
Thomas Hall, Clerk	30 00
California Jewelry Company, medals	385 00
B. G. Perry, premium	13 00
Bradwell, stairkeeper	18 00
J. Nickeson, labor	69 00
C. Collins, police	18 00
D. O. Mills & Co., interest	184 83
P. A. Espina, filling diplomas	139 25
I. N. Hoag, salary	150 00
Robert Beck, salary	150 00
Total disbursements for 1871	$44,191 87

SPEED PROGRAMME---1871.

MONDAY, SEPTEMBER 18TH.

FIRST RACE—CLASS I.

Trotting Race—Mile heats; three in five; free for all stallions. Purse, one thousand dollars; first horse, five hundred dollars; second horse, two hundred and fifty dollars; third horse, one hundred and fifty dollars; fourth horse, one hundred dollars.

Entries.

By whom entered.	P. O. address.	Name.	Driver.
S. B. Whipple	San Francisco	b. h. Ajax	John McLelland
William Hamilton		b. h. Alexander	John Mackey
Singleterry & Boggs	Princeton	blk. h. Blackbird	Dan. Dennison
Cornelius Staggs	San Francisco	blk. h. Hiram Woodruff	J. W. Driscoll
Peter Goodhue		s. h. Copperhead	

Result.

Ajax	2	2	dis.
Alexander	...	...	...
Blackbird	1	1	1
Hiram Woodruff	dis.		
Copperhead	dis.		

Time—2:28; 2:32½; 2:54¾.

Judges—Charles F. Reed, S. T. Brewster, Edgar Mills.

SECOND RACE—CLASS II.

Trotting Race—Mile heats; three in five; in harness; free for all horses that have never beaten three minutes.

Entries.

By whom entered.	P. O. Address.	Name.	Driver.
Mr. Bailey	San Francisco	br. g. Surprise	A. Cummings
Mr. Corbetts		br. m. Highland Mary	H. L. Spencer
John Boggs	Princeton	gr. m. May Howard	Dan. Dennison
Charles McLaughlin	San Jose	rn. m. Nell	J. B. Hinkle
P. A. Finnegan	San Francisco	s. g. Fred	
Perry Gwinnet		rn. g. Berkley Boy	
C. B. Polhemus	Santa Clara	b. c. Forrest	John Gordon.

Result.

Surprise	...	...	...	...
Highland Mary	d. h.	2	2	2
May Howard	d. h.	1	1	1
Nell	...	...	...	...
Fred	...	...	...	...
Berkley Boy	...	...	...	...
Forrest	2 dis.			

Time—2:36½; 2:34; 2:36½; 2:36¾.

TUESDAY, SEPTEMBER 19TH.

FIRST RACE—CLASS III.

Running Race—Mile and repeat; free for all three year olds. Purse, eight hundred dollars; first horse, four hundred dollars; second horse, two hundred dollars; third horse, one hundred and twenty-five dollars; fourth horse, seventy-five dollars.

Entries.

By whom entered.	P. O. Address.	Name.	Age.	Pedigree.
George Treat	San Francisco.	g. c. Gov. Stanford	3 yrs.	By Norfolk, dam Fannie Hopper.
F. G. Singleford	Colusa	b. c. Captain Jinks	3 yrs.	By Norfolk, dam by Belmont.
John Boggs	Princeton	Mark Twain	3 yrs.	By Norfolk, dam Ariadne, by Belmont.
J. C. Taylor	Tehama	Nelly Brown	3 yrs.	By Rifleman, by imported Sovereign.
R. T. O'Hanlon	San José	br. f. ——	3 yrs.	By Norfolk, dam Santa Clara, by Owen Dale.
John Hall	San José	Ironclad		By Woodburn, dam Peggy Ringgold.

Result.

Governor Stanford	dis.	
Captain Jinks	5	4
Mark Twain	2	5
Nelly Brown	4	2
———	3	3
Ironclad	1	1

Time—1:46; 1:46½.

Judges—C. F. Reed, John M. Duncan, S. T. Brewster.

SECOND RACE—CLASS IV.

Running Race—Mile heats, three in five; free for all. Purse, fifteen hundred dollars; first horse, eight hundred dollars; second horse, four hundred dollars; third horse, two hundred dollars; fourth horse, one hundred dollars.

Entries.

By whom entered.	P. O. Address.	Name.	Age.	Pedigree.
Geo. Treat	San Francisco.	br. c. Oliver Cromwell	4 yrs.	By Lodi, dam Annette.
Geo. A. Johnson		b. c. Sheridan	4 yrs.	By Norfolk, dam Bonny Belle.
Thos. Atchison	Sacramento	g. c. Thos. Atchison	4 yrs.	By Norfolk, dam Mary G.
James Shelton		br. m. Nell Flaherty.	4 yrs.	By Rifleman, by Belmont.
J. C. Taylor	Tehama	b. m. ———	4 yrs.	By Rifleman, by imported Sovereign.
Theo. Winters	Davisville	b. c. Bois d'Arc	4 yrs.	By Norfolk, dam Liberty by Rifleman.
John Hall		b. m. Alice May	4 yrs.	By Woodburn, dam Peggy Ringgold.

Result.

Oliver Cromwell	6	3	3
Sheridan	2	6	4
Thos. Atchison	5	2	2
Nell Flaherty	1	1	1
———	0	0	0
Bois d'Arc	3	5	6
Alice May	4	4	5

Time—1:45½; 1:45¼; 1:46.

WEDNESDAY, SEPTEMBER 20th.

First Race—Class V.

Trotting Race—Mile heats; three in five; in harness; free for all horses that have never beaten 2:30. Purse, one thousand dollars; first horse, five hundred dollars; second horse, two hundred and fifty dollars; third horse, one hundred and fifty dollars; fourth horse, one hundred dollars.

Entries.

By whom entered.	P. O. Address.	Name.	Driver.
Mr. Slicer	San Francisco	b. c. Frank Rhoads, formerly John Conness	Col. Dickey.
Wm. Hamilton		b. h. Alexander	John Mackey.
E. M. Skaggs	Sacramento	b. m. Mary Davis	H. L. Spencer.
Singleterry & Boggs	Princeton	blk. h. Blackbird	
E. H. Miller	Sacramento	b. m. May Fly	A. F. Smith.
John Boggs	Princeton	s. g. Jerome	Dan. Dennison.
John Dickerson	Woodland	b. g. California Dexter	Barney Rice.
Peter Goodhue		s. h. Copperhead	
Ben. E. Harris	San Francisco	b. g. Regulator	

Result.

Frank Rhoads	3	2	3	3
Alexander	...	...	...	...
Mary Davis	dis.			
Blackbird	...	...	...	...
May Fly	2	1	1	1
Jerome	1	3	2	2
California Dexter	5	4	4	5
Copperhead	dis.			
Regulator	4	5	5	4

Time—First horse—2:33; 2:34; 2:33½; 2:34¾.
Second horse—2:34¾; 2:34¼; 2:33¾; 2:34¾.

Fines—Dan. Dennison, twenty-five dollars; Barney Rice, five dollars.

Second Race—Class VI.

Trotting Race—Mile heats; three in five, in harness; free for all horses that have never beaten 2:50. Purse, one thousand dollars; first horse, five hundred dollars; second horse, two hundred and fifty dollars; third horse, one hundred and fifty dollars; fourth horse, one hundred dollars.

Entries.

By whom entered.	P. O. Address.	Name.	Driver.
C. H. Sisson	Stockton	blk. m. Sisson Girl, formerly Black Nance	M. Ryan.
Samuel Daniels	Chico	b. g. Dutchman	
H. L. Spencer	San José	br. m. Highland Mary	
C. B. Polhemus	San José	b. c. Forrest	John Gordon.
John Boggs	Princeton	gr. m. May Howard	Dan. Dennison.
Charles McLaughlin	San José	rn. m. Nell	J. B. Hinkley.

Result.

Sisson Girl	2	2	2	2
Dutchman	...	...	...	...
Highland Mary	3	1	3	3
Forrest	dist.			
May Howard	1	3	1	1
Nell	...	...	...	...

Time—First horse—2:37½; 2:36¼; 2:37¾; 2:39¼.
Second horse—2:39; 2:37; 2:40.

THURSDAY, SEPTEMBER 21st.

First Race—Class VII.

Pacing Race—Mile heats, three in five; Mayo to wagon, Defiance, or any other horse which may be imported after this date, in harness; and all others to go as they please. Purse, six hundred dollars; first horse, three hundred dollars; second horse, two hundred dollars; third horse, one hundred dollars.

Entries.

By whom entered.	P. O. Address.	Name.	Driver.
S. C. Bowley	San Francisco	s. g. Longfellow	Pat. Ferrell.
A. F. Smith	Sacramento	s. g. Albany Boy	A. F. Smith.
A. C. St. Johns	San José	r. g. Defiance	H. L. Spencer.

Result.

Longfellow	3	2	3
Albany Boy	2	3	2
Defiance	1	1	1

Time—First horse—2:25; 2:22½; 2:23.
Second horse—2:27½; 2:26; 2:33.

SECOND RACE—CLASS VIII.

Running Race—Two mile heats; free for all. Purse, twelve hundred dollars; first horse, six hundred dollars; second horse, three hundred dollars; third horse, two hundred dollars; fourth horse, one hundred dollars.

Entries.

By whom entered.	P. O. Address.	Name.	Age.	Pedigree.
George Treat	San Francisco	b. c. Oliver Cromwell	4 yrs.	By Lodi, dam Annette.
Geo. A. Johnson		b. c. Sheridan	4 yrs.	By Norfolk, dam Bonny Belle.
Thomas Atchison	Sacramento	g. c. Thos. Atchison	4 yrs.	By Norfolk, dam Mary G.
Singleterry and Funk	Colusa	b. c. Capt. Jinks	3 yrs.	By Norfolk, dam Belmont.
Nathan Coombs	Napa	b. c. Gift	3 yrs.	By Lodi, dam Ruby by Winnebago.
James Shelton	Tehama	br. m. Nell Flaherty	4 yrs.	By Rifleman, dam Jennie Hall.

Result.

Oliver Cromwell	
Sheridan	dist.
Thomas Atchison	1 1
Captain Jinks	
Gift	
Nell Flaherty	2 dis

Time—3:37½; 3:41¼.

FRIDAY, SEPTEMBER 22D.

FIRST RACE—CLASS IX.

Trotting Race—Mile heats; three in five; free for all horses that have never beaten 2:35. Purse, one thousand dollars; first horse, five hundred dollars; second horse, two hundred and fifty dollars; third horse, one hundred and fifty dollars; fourth horse, one hundred dollars.

Entries.

By whom entered.	P. O. Address.	Name.	Driver.
S. B. Whipple	San Francisco	b. h. Ajax	J. McLellan.
H. L. Spencer	San José	b. m. Flora	
John Boggs	Princeton	gr. m. May Howard	Dan. Dennison.
John Dickenson	Woodland	br. g. Danger	Barney Rice.
Charles McLaughlin	San José	rn. m. Nell	J. B. Hinkley.
E. M. Skaggs	Sacramento	b. m. Lady Belle	
Pat. Finnegan	San Francisco	b. m. Peanuts	
A. Maillard	San Rafael	b. m. Lady Slasher	Mr. Ellis.
C. Staggs	San Francisco	blk. h. Hiram Woodruff	James Driscoll.
Peter Goodhue		s. h. Copperhead	
J. T. Wilson		s. m. Coquette	
John Boggs	Princeton	g. m. Marysville Queen	

Result.

Ajax	...	...	...	...	...
Flora	...	...	...	...	...
May Howard	1	2	1	3	4
Danger	...	...	...	...	...
Nell	...	...	...	...	...
Lady Belle	...	...	...	...	...
Peanuts	4	3	3	2	2
Lady Slasher	2	1	2	1	1
Hiram Woodruff	dis.				
Copperhead	5	5	4	5	dis.
Coquette	3	4	5	4	3
Marysville Queen	...	...	...	...	...

Time—First horse—2:36¼; 2:36½; 2:40; 2:36½; 2:37½.
Second horse—2:36½; 2:38¼; 2:40¼; 2:37½; 2:40¾.

Fines—Mr. Finnegan, five dollars; Mr. Farrell, five dollars; Dan. Dennison, five dollars.

SECOND RACE—CLASS X.

Trotting Race—Mile heats; three in five; in harness; free for all horses. Purse, one thousand five hundred dollars; first horse, eight hundred dollars; second horse, four hundred dollars; third horse, two hundred dollars; fourth horse, one hundred dollars.

Entries.

By whom entered.	Residence.	Name.	Driver.
Mr. Slicer	San Francisco	b. g. Frank Rhoads (formerly John Conness)	Colonel Dickey
E. M. Skaggs	Sacramento	b. m. Mary Davis	H. L. Spencer
John Boggs	Princeton	s. g. Jerome	Dan. Dennison
E. H. Miller	Sacramento	b. m. May Fly	A. F. Smith
John Dickenson	Woodland	b. g. California Dexter	Barney Rice
Benjamin E. Harris	San Francisco	b. g. Regulator	

Result.

Frank Rhoads	2	3	5	1	1	d.	h.	1
Mary Davis	...	...	...	...	...	...	...	...
Jerome	4	4	1	2	2	d.	h.	3
May Fly	1	1	2	3	3	2	2	
California Dexter	3	2	3	4	4	...	...	
Regulator	5	5	4	...	...	...	...	

Time—First horse: 2:33; 2:33¼; 2:32½; 2:30½; 2:33½; 2:33¼; 2:34½.
Second horse: 2:34; 2:33¾; 2:32¾; 2:30½; 2:33¾; 2:33¼.

SATURDAY, SEPTEMBER 23D.

FIRST RACE—CLASS XI.

Running Race—Three mile heats; free for all. Purse, one thousand two hundred dollars; first horse, six hundred dollars; second horse, three hundred dollars; third horse, two hundred dollars; fourth horse, one hundred dollars.

By whom entered.	P. O. Address.	Name.	Age.	Pedigree.
George Treat	San Francisco.	br. c. Oliver Cromwell	4 yrs.	By Lodi, dam Annette.
Geo. A. Johnson		b. c. Sheridan	4 yrs.	By Norfolk, dam Bonny Belle.
William Cavod		b. c. Pill Box	4 yrs.	By Norfolk, dam Ada C.
Theodore Winters.	Davisville	b. c. Bois d'Arc	4 yrs.	By Norfolk, dam Liberty by Rifleman.
James Saterlee	San José	b. g. Moses Taylor		

Result.

Oliver Cromwell	1
Sheridan	...
Pill Box	dist.
Bois d'Arc	...
Moses Taylor	...

SECOND RACE—CLASS XII.

Running Race—Mile heats; free for all beaten horses. Purse, seven hundred and fifty dollars; first horse, four hundred dollars; second horse, two hundred dollars; third horse, one hundred dollars; fourth horse, fifty dollars.

Entries.

By whom entered.	P. O. Address.	Name.	Age.	Pedigree.
John Hall	Alvarado	b. m. Alice May	4 yrs.	By Woodburn, dam Peggy Ringgold.
Theo. Winters	Solano Co	b. c. Bois d'Arc	4 yrs.	By Norfolk, dam Liberty by Rifleman.
J. C. Taylor	Tehama			
G. A. Johnson		Sheridan	4 yrs.	By Norfolk, dam Bonny Belle.

Result.

Alice May	1	1
Bois d'Arc	2	2
———	4	3
Sheridan	3	...

Time—1:47½; 1:46¼.

PREMIUMS AWARDED IN 1871.

FIRST DEPARTMENT.

CLASS I.—THOROUGHBRED HORSES.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Stallions.		
Nathan Coombs	Napa	Best stallion, four years old and over	Lodi	$75
John Hall	Alvarado	Best stallion, three years old and over	Norfolk	$50
John Boggs	Colusa	Best stallion, two years old and over	Tom Merry	$40
John Hall	Alvarado	Best stallion, one year old and over	Alic	$30
John Hall	Alvarado	Best colt, under one year	Bally	$20
		Mares.		
John Hall	Alvarado	Best mare, four years old and over, with colt	Peggy Ringgold	$60
A. D. Maillard	San Rafael	Best mare, four years old and over	Hennie Farra	$50
R. T. Leet	Sacramento	Best mare, three years old	Fringe	$40
John Hall	Alvarado	Best mare, two years old	Abi	$30
Theo. Winters	Solano	Best mare, one year old.	Laura Barnes	$25
A. D. Maillard	San Rafael	Best mare colt, under one year	Bell	$20
		Families.		
Theo. Winters	Solano	Best thoroughbred sire, with not less than ten of his colts, all thoroughbred	Norfolk	$100
John Hall	Alvarado	Best thoroughbred dam, with not less than four of her colts, all thoroughbred	Peggy Ringgold	$60
Alexander Ely	San Francisco.	Best stallion, other than thoroughbred, with not less than ten of his colts	Alexander	$75
Daniel Flint	Sacramento	Best dam, other than thoroughbred, with not less than three of her colts	Nelly Bly	$50
S. B. Whipple	San Mateo	Stallion	Speculation	Special, silver goblet $30

CLASS II.—HORSES OF ALL WORK.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Stallions.		
Joshua Reeves...	Placer County	Best stallion, four years old and over.....	Vibrator	$40
R. A. Branton...	Solano County	Best stallion, three years old	Tickle MyFancy	$30
W. D. Ashley...	Stockton	Best stallion, two years old	Bismarck.....	$20
S. B. Whipple...	San Mateo.....	Best stallion, one year old	Speculation, Jr..	$15
		Mares.		
G. W. McWain.	Chico.	Best mare, four years old and over, with colt.....	Julia Ann.....	$40
John Howes.....	San Francisco	Best mare, four years old and over.....	Lady Grant.....	$30
Alexander Ely...	San Francisco	Best mare, three years old	Dolly	$20
S. B. Whipple...	San Mateo.....	Best mare, two years old	Ada Whipley....	$15
S. L. Monday...	Cacheville	Best mare, one year old.	Wild Pigeon.....	$10

CLASS III.—GRADED HORSES.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Stallions.		
David Berry.....	Oakland	Best stallion four years old and over.....	Henry Williamson	$50
D. M. Downey...	Solano County	Best stallion three years old	Ironclad	$40
J. D. Carr.....	Monterey	Best stallion two years old.....	Membrino Patchen, Jr.....	$30
A. Musick.....	Sacramento ...	Best stallion one year old	Selkirk.....	$20
Alexander Ely...	San Francisco	Best colt under one year old, without reference to sex	No Name.....	$20
		Mares.		
Jas. A. Merritt..	Napa	Best mare four years old and over	Clara Hastings ..	$40
C. H. Shear	Sacramento ...	Best mare three years old	Lily Shear.....	$30
S. B. Whipple...	San Mateo.....	Best mare two years old	Dot	$20
C. H. Shear	Sacramento ...	Best mare one year old..	Peggy McGee...	$15

CLASS IV.—DRAFT HORSES.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Stallions.		
John Dardis.....	Petaluma.....	Best stallion four years old and over	Ottawa Chief.....	$40
R. W. Pemberton	Vallejo	Best stallion three years old	Prince June.....	$30
Daniel McCray..	San José	Best stallion one year old	Black Sand.....	$15
		Mares.		
John Neal.....	Sacramento ...	Best mare four years old and over, with colt.....	Eliza	$40
F. M. Shepler....	Sacramento ...	Best mare three years old	Julia	$25
A. H. Thomson..	Folsom	Best mare two years old..	Mignoni.....	$20

CLASS V.—ROADSTERS.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Stallions.		
J. E. Miller.....	Sacramento....	Best stallion, four years old and over, with colt	St. Clair.....	$50
Alexander Ely...	San Francisco.	Best stallion, three years old	Gen. Dana.....	$40
S. B. Whipple...	San Mateo.....	Best gelding, four years old and over.....	Westfield.....	$40
		Mares.		
S. B. Whipple...	San Mateo.....	Best mare, four years old and over.....	Lady Blanchard	$40
Joshua Sessions.	Brooklyn	Best mare, three years old	Oakland Maid...	$30
				Special Prem.
Walter Smith....	Oakland.....	Roadster stallion.....	Terminus.....	..Silv. cup—$15
Edw. Barnes.....	San Francisco.	Roadster gelding.....	Ben. Hancock...	..Silv. cup—$15
S. B. Whipple...	San Mateo.....	Roadster stallion.....	California Dexter.....	..Silv. cup—$15
Rufus Denmark.	Centerville.....	Roadster stallion.....	Young Rattler...	..Silv. cup—$15
E. M. Skaggs....	Sacramento....	Roadster stallion.....	Rattler	..Silv. cup—$15
Peter Donahue...	San Francisco.	Roadster gelding.....	Pat. Malloy.....	..Silv. cup—$15

CLASS VI.—CARRIAGE HORSES.

Exhibitor.	Residence.	Animal.	Name.	Premium.
W.B. Holcombe	San Francisco.	Best matched span, owned by one person.....	Bucephalus and Prince	Sil.goblet—$40

CLASS VII.—ROADSTER TEAMS.

Exhibitor.	Residence.	Animal.	Name.	Premium.
—— Tobin.....	San Francisco.	Best double team roadsters owned and used by one person.....	Paddy McGee & Brown Mac....	Sil.goblet—$40

CLASS VIII.—SADDLE HORSES.

Exhibitor.	Residence.	Animal.	Name.	Premium.
A. Musick.....	Sacramento....	Best saddle horse.....	Tom Tickle.....	Fine bridle.

CLASS IX.—COLTS.

Exhibitor.	Residence.	Animal.	Name.	Premium.
A. A. Bennett...	Sacramento....	Best yearling horse colt..	White Nose.....	$30
R. M. Briggs.....	Buckeye.....	Best sucking horse colt...	Brick Pomeroy..	$20
C. H. Shear.....	Sacramento....	Best yearling mare colt...	Peggy McGee....	$20
John Neal.....	Sacramento....	Best sucking mare colt...	Flora.....	$15
S. B. Whipple...	San Mateo.....	Best exhibit of not less than six colts, of any age or sex, owned by one person.....		$50

CLASS X.—SWEEPSTAKES.

Exhibitor.	Residence.	Animal.	Name.	Premium.
Theo. Winters..	Solano	Best stallion of any age..	Norfolk	Sil.pitch'r-$150
S. B. Whipple...	San Mateo.....	Best mare of any age.....	Harvest Queen...	Sil.pitch'r-$100

CLASS XI.—JACKS AND MULES.

Exhibitor.	Residence.	Animal.	Name.	Premium.
T. E. Price.....	Hicksville	Best jack.....	Mammoth.....	$50
Thos. Edwards..	Sacramento....	Best jennet.....	Lady Franklin..	$40
Thos. Edwards..	Sacramento....	Best mule, one year old..	Fan.....	$15

CLASS I.—THOROUGHBRED CATTLE.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Durham Bulls.		
C. Younger.....	San José.....	Best bull, four years old and over.....	Glencoe	$75
R. B. Cannon...	Solano Co.....	Best bull, three years old and over.....	Perfection.....	$40
G. N. Swezy.....	Marysville.....	Best bull, two years old and over.....	First Duke of Yuba.....	$30
Werner&Hamill	Davisville.....	Best bull, one year old and over.....	Bolingbroke.....	$25
C. Younger.....	San José	Best bull calf.....	Richmond.....	$15
		Durham Cows.		
C. Younger.....	San José.....	Best cow, four years old and over.....	Maggie.....	$50
C. Younger.....	San José.....	Best cow, three years old and over.....	Sprightly.....	$40
R. M. Sparks.....	Lincoln	Best cow, two years old and over.....	Maggie Second..	$30
C. Younger.....	San José.....	Best cow, one year old and over.....	Mary Stuart.....	$25
R. B. Cannon...	Solano Co.....	Best heifer calf.....	Ella Tenth.....	$15
		Devon Bulls.		
J. R. Rose.....	Lakeville.....	Best bull, four years old and over.....	Bloomfield.....	$75
J. R. Rose.....	Lakeville.....	Best bull, three years old and over.....	Frank Quarterly	$40
J. R. Rose.....	Lakeville.....	Best bull, one year old and over.....	Red Jacket.....	$25
J. R. Rose.....	Lakeville.....	Best bull calf.....	Rover.....	$15
		Devon Cows.		
J. R. Rose.....	Lakeville.....	Best cow, four years old and over.....	Maud Second.....	$50
J. R. Rose.....	Lakeville.....	Best cow, three years old and over.....	Mary.....	$40
J. R. Rose.....	Lakeville.....	Best cow, one year old and over.....	Nelly	$20
J. R. Rose.....	Lakeville.....	Best heifer calf.....	Jenny.....	$15
		Ayrshire Cattle.		
M. Bryte.....	Sacramento....	Best cow, one year old and over.....	Flora McIvor....	$20

CLASS II.—GRADED CATTLE.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Bulls.		
E. Comstock.....	Yolo County..	Best bull, three years old and over.....	Billy	$30
Werner & Hamill	Davisville	Best bull, one year old and over.....	Billy	$15
Robt. Ashburner	San Mateo.....	Best bull calf.....	Major	$10
		Cows.		
Clark & Cox	Sacramento....	Best cow, four years old and over.....	Emma	$30
E. Comstock.....	Yolo County...	Best cow, three years old and over.....	White Lily.....	$20
R. Williamson...	Sacramento....	Best cow, two years old and over.....	Lily	$15
R. B. Cannon....	Solano County	Best cow, one year old and over.....	Molly	$10
Coleman Younger.....	San Jose.....	Best herd of any one breed, not less than ten, owned by any one person		$100
				Special.
Clark & Cox.....	Sacramento....	Graded heifer calf.....	Laura	Silver cup–$15
—— Harris.....		Fat steer and cow.....		Sil. goblet–$20

CLASS III.—CATTLE SWEEPSTAKES.

Exhibitor.	Residence.	Animal.	Name.	Premium.
G. N. Swezy.....	Marysville	Best bull of any age or stock.....	First Duke of Yuba	Sil.pitch'r-$100
G. N. Swezy.....	Marysville	Best cow of any age or stock.....	Beauty.....	Sil. pitcher-$75

STOCK SHEEP AND MUTTON.

Exhibitor.	Residence.	Animal.	Name.	Premium.
Landrum & Rogers	Watsonville...	Best ram two years old and over.....	William Wallace	$20
Peter Saxe.....	Sacramento....	Best ram under two years	No Name.....	$15
Peter Saxe.....	Sacramento....	Best three ewes two years old and over.....		$15
Peter Saxe.....	Sacramento....	Best three ewes under two years.....		$10

SPANISH MERINO.

Exhibitor.	Residence.	Animal.	Name.	Premium.
Amos Roberts...	Solano county	Best ram two years old and over.....	Red Leg.....	$30
Smith & Overhiser.....	Grayson	Best ram under two years		$30
Thos. M'Connell	Elk Grove.....	Best three ram lambs.....		$20
Amos Roberts...	Solano County	Best three ewes two years old and over.....		$20
Smith & Overhiser.....	Grayson	Best three ewes under two years.....		$20

FRENCH MERINOS.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Rams.		
William Blaco...	Centerville.....	Best ram, two years old and over.....		$30
William Blaco...	Centerville.....	Best ram under two years		$20
William Blaco...	Centerville.....	Best three ram lambs.....		$20
		Ewes.		
William Blaco...	Centerville.....	Best three ewes, two years old and over.....		$20
William Blaco...	Centerville.....	Best three ewes, under two years.....		$20
William Blaco...	Centerville.....	Best five ewe lambs.....		$20

SILESIAN SHEEP.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Rams.		
Robert Beck.....	Sacramento....	Best ram, two years old and over.....		$30
		Ewes.		
Robert Beck	Sacramento....	Best three ewes, two years old and over.....		$20

COTSWOLD SHEEP.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Rams.		
Peter Saxe	Sacramento	Best ram, two years old and over		$30
Landrum & Rogers	Watsonville	Best ram, under two years	California Chief.	$20
Landrum & Rogers	Watsonville	Best three ram lambs		$20
		Ewes.		
Landrum & Rogers	Watsonville	Best three ewes, two years old and over		$20
Peter Saxe	Sacramento	Best three ewes, under two years		$20
Landrum & Rogers	Watsonville	Best five ewe lambs		$20

LEICESTERSHIRE SHEEP.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Rams.		
William Blaco	Centerville	Best ram, two years old and over		$30
William Blaco	Centerville	Best ram, under two years		$20
William Blaco	Centerville	Best three ram lambs		$20
		Ewes.		
William Blaco	Centerville	Best three ewes, two years and over		$20
William Blaco	Centerville	Best three ewes, under two years		$20
William Blaco	Centerville	Best five ewe lambs		$20

CROSS BETWEEN ANY TWO THOROUGHBRED.

Exhibitor.	Residence.	Animal.	Name.	Premium.
		Rams.		
Smith & Overhiser	Grayson	Best ram, under two years old (cross between Spanish and French merino)		$20

GRADE OR CROSS WITH SPANISH MERINO.

Exhibitor.	Residence.	Animal.	Name.	Premium.
Mrs. F. Graham.	Elk Grove.....	Best ram, two years old and over.....		$20
Mrs. F. Graham.	Elk Grove.....	Best ram under two years.....		$15
Mrs. F. Graham.	Elk Grove.....	Best three ram lambs.....		$20
Mrs. F. Graham.	Elk Grove.....	Best three ewes, two years old and over.....		$15
Mrs. F. Graham.	Elk Grove.....	Best three ewes under two years.....		$15
Mrs. F. Graham.	Elk Grove.....	Best five ewe lambs.....		$15

CROSS WITH COTSWOLD.

Exhibitor.	Residence.	Animal.	Name.	Premium.
H. A. Rawson...	Tehama	Best ram, two years old and over.....		$20
H. A. Rawson...	Tehama	Five bucks.....		Premium recommended.

SWEEPSTAKES.

Exhibitor.	Residence.	Animal.	Name.	Premium.
Amos Roberts...	Solano County	Best buck of any age or breed.....	Red Leg.....	$30
Amos Roberts...	Solano County	Best ewe of any age or breed.....		$25
Amos Roberts...	Solano County	Best pen of not less than five of any age or breed.		$30

ANGORA GOATS.

Exhibitor.	Residence.	Animal.	Name.	Premium.
Gray & Gilmore.	El Dorado County.....	Best thoroughbred buck..	Sultan II.....	$30
Landrum & Rogers.....	Watsonville...	Best thoroughbred she goat.....		$20
Gray & Gilmore.	El Dorado County.....	Best thoroughbred three kids.....		$20

GRADED GOATS.

Exhibitor.	Residence.	Animal.	Name.	Premium.
Gilmore	El Dorado County	Best lot of three		$15
H. A. Rawson	Tehama	Best two years old South-down ram		Special—$30
H. A. Rawson	Tehama	Best one year old South-down ram		Special—$20
H. A. Rawson	Tehama	Best pen of five South-down rams		Special—Silver goblet—$20

SWINE.

Exhibitor.	Residence.	Animal.	Name.	Premium.
M. Sprague	Sacramento	Best boar, two years old and over	Dick	$30
R. S. Thompson.	Napa	Best boar under two years	General Warren	$20
R. S. Thompson.	Napa	Best boar, six months old and under one year		$10
Peter Burns	Sacramento	Best breeding sow, two years old and over	Mary	$25
R. S. Thompson.	Napa	Best breeding sow, one year old	Victoria Second.	$15
R. S. Thompson.	Napa	Best sow, six months old and under one year		$10
R. S. Thompson.	Napa	Best lot of not less than six pigs, not less than five nor more than ten months old		$20
Peter Saxe	Saeramento	Berkshire pigs, imported.		Special—Silver goblet—$20

POULTRY.

Exhibitor.	Residence.	Animal.	Premium.
Peter Burns	Sacramento	Best white or gray Dorkings	$5
Peter Burns	Sacramento	Best Jersey blues	$5
Charles Green		Best lot of English game	$5
T. E. Finley, agent California Stock and Poultry Association		Best light Brahmas	$5
T. E. Finley		Best two lots of dark Brahmas	$5
T. E. Finley		Best two lots of buff Cochins	$5
T. E. Finley		Best two lots of silver-spangled Hamburgs	$5
T. E. Finley		Best lot of Silver Polish	$5
T. E. Finley		Best lot of Golden Polish	$5
T. E. Finley		Best lot of Japan bantams	$5
T. E. Finley		Best lot of game bantams	$5

POULTRY—Continued.

Exhibitor.	Residence.	Article.	Premium.
T. E. Finley		Best lot of golden lace Sea-bright bantams	
T. E. Finley		Best lot of Houdans	
T. E. Finley		Best lot of partridge Cochins	
T. E. Finley		Best lot of Rouen ducks	$5
R. Towne		Best lot of silver-penciled and Dominiques	$5
C. W. Upson		Best lot of Crevecœurs	$5
Robert Cowne		Best lot of turkeys	$5
Peter Burns	Sacramento	Best lot of geese	$5
		The committee recommend a premium of $5 to the exhibitor of four pair of Madagascar rabbits.	

SECOND DEPARTMENT.

MACHINERY, IMPLEMENTS, Etc.

Exhibitor.	Residence.	Article.	Premium.
The Babcock Northwestern Fire Extinguishing Co., S. C. McDowell, ag't.	San Francisco	Fire engine and extinguishers	Framed diploma.
Pacific Pneumatic Gas Co., F. P. Howard, agent	San Francisco	Pneumatic gas machine	Diploma.
Thomas Day, F. P. Howard, agent	San Francisco	New style opal globes and chandeliers, lighted by pneumatic gas	Favorable mention.
L. Marks and Molineaux	San Francisco	Pacific gas machine	Diploma.
Jones & Hewlett	Stockton	Portable thrashing machine, Wood, Taber & Morse, Eastern manufacture	Diploma.
C. B. Brown	Placerville	Self-generating gasburners	Diploma.
Nicolas Lumsden	Sacramento	Machine for manufacture of screwed boots and shoes	Diploma.
J. M. Frey, M. D.	Sacramento	Model of Frey's improvement on Evans' under-current sluices for saving gold and quicksilver, for quartz mills and surface mines	Diploma.
Keller & Willard	Franklin	Vibrator thrashing machine and mounted horsepower	Framed diploma.
Atwood & Bodwell, M. S. Bowdish, ag't	San Francisco	"Little Giant" sweep horse-power	Diploma.

MACHINERY, IMPLEMENTS, ETC.—Continued.

Exhibitor.	Residence.	Article.	Premium.
Matteson & Williamson	Stockton	Large chisel cultivator, self-sharpening	Diploma.
Matteson & Williamson	Stockton	Horse hay or grain fork	$5.
W. H. Pope	Stockton	Graham's broadcast combined seeder and cultivator	Diploma.
Baker & Hamilton	San Fran. and Sacramento	Combined "Buckeye" reaper and mower, Nos. 1 and 2. Eastern manufacture	Diploma.
Dunn & Campbell	San Francisco	Iron harrow	$5.
B. F. Cook	Napa City	Steam harvester	Favorable mention.
E. F. Aiken	Sacramento	Horse corn cultivator	$5.
M. S. Bowdish	San Francisco	Challenge feedmill, California manufacture	Diploma and $10.
Dewey & Co.	San Francisco	Phillip's patent spiral corn-husker, husks corn from stalks, or after it is picked.	Diploma.
Nash, Miller & Co.	Sacramento	Grain separator	Diploma and $5.
F. M. Ranous	Yreka	Patent gate latch, California invention; and regulator, California invention	Diploma recommended
Baker & Hamilton	San Fran. and Sacramento	Buckeye cider mill	Diploma.
J. S. Harbison	Sacramento	Beehive	Diploma.
J. S. Harbison	Sacramento	Italian bees	Diploma.
N. S. W. Parkhurst	San Francisco	Display of scales	Diploma.
J. G. Anderson	Gilroy	Patent cheese vat	Diploma and $10
J. G. Anderson	Gilroy	Curd cutters	Diploma.
J. G. Anderson	Gilroy	Agitator	Diploma.
J. G. Anderson	Gilroy	Lactometer	Diploma.
Iddo Green	Richmond	Butter worker	Diploma.
A. S. Hallidie	San Francisco	Endless wire ropeway	Silver medal.
A. S. Hallidie	San Francisco	Patent grip pulley	Framed diploma.
Thomas B. Park	Downieville	Double action horizontal rotary churn (California invention)	$10
William Cantelow	Vacaville	Churns	Diploma.
Weichort & Co.	San Francisco	Reaping and mowing knives	$5
David N. Phelps	San Leandro	Air pump for preserving fruit, milk, etc	Diploma.
Thomas Orchard	Sacramento	Well auger	Silver medal.
Thomas Orchard	Sacramento	Post auger	Diploma.
G. A. Lloyd	San Francisco	Gopher trap	Diploma.
Williams & Humphrey	Stockton	Barley forks	Diploma.
Laufkotter Brothers	Sacramento	Stock's patent pump valves	Diploma.
Otis H. Weed & Co.	Sacramento	Patent carpet sweeper	Diploma.
Dr. J. L. Bartlett	Stockton	Portable gas machine	Diploma.
I. L. Merrill	Sacramento	Bright Union safety lamp	Silver medal.
Williams & Humphrey	Stockton	Grain draper and header apron	Diploma.
Thomas Wheaton	San Francisco	Buckeye hay and straw cutter	Diploma.
Hawley & Co.	San Francisco	Clipper mower	Diploma.
M. Barthel	Pacheco	Best farm gate	$15
M. L. Reynolds	Sacramento	Imperial wash boiler and machine combined	Diploma and $5
H. H. Hewlett	Stockton	Williamson's road steamer (Thompson's patent)	Diploma and $50

PLOWS.

Exhibitor.	Residence.	Article.	Premium.
Hill & Knaugh	Marysville	Two gang plows	$40
Hill & Knaugh	Marysville	Stubble plow	$10
Matteson & Williamson	Stockton	Plow for general purposes	$10
M. P. Rose	Napa	One-horse plow	$5
Myres & Gummow	Marysville	Subsoil gang plow	$10
Matteson & Williamson	Stockton	Sulky two gang plow	Special—$30
G. W. Haines	Maine Prairie	Two gang plow	Special—$20
W. B. Ready	Sacramento	Two gang plow	Special—$20

VEHICLES.

Exhibitor.	Residence.	Article.	Premium.
Studebaker Brothers Manufacturing Co. (Ames & Woolverton, agents)	Sacramento	Two farm wagons, one thimble skein, and one iron axle	Diploma.
Ross & Smith	Reno	Two sulkies (Ross' patent wheel)	Diploma.
Waterhouse & Lester	Sacramento	Assortment of wagon and carriage material and trimmings	Diploma.
W. M. Betts & Co.	San Francisco	Three sets of side carriage springs, one set milk wagon springs, one set of Clarence springs, five sets of buggy springs, one set of sulky springs, one set of express wagon springs	Framed Diploma.
S. H. Davis	Sacramento	One Little Giant carriage jack	$5
Daniel Mason	Sacramento	One single seat open buggy	Diploma.
Harry Bernard	Sacramento	Five top buggies (two with patent wheels)	
Harry Bernard	Sacramento	One trotting sulky (weight 64¾ pounds)	Silver medal.
Harry Bernard	Sacramento	One spring market wagon	$15
Harry Bernard	Sacramento	One street goods wagon	$5
Harry Bernard	Sacramento	Twenty sets of carriage and buggy wheels and hubs	$10
P. Craig and son	San Francisco	One hearse	Diploma.
Excelsior Power Co. of New York (E. Soule, agent)	Sacramento	One anti-friction axle with metallic balls applied	Diploma recommended
E. Soule	Sacramento	One light running gear with anti-friction bearing, locust hubs, set wheels (locust hubs and bent rims), locust felloes and planks—wood, California growth, and all California make	Diploma.
E. Soule	Sacramento	Assortment of thimble skeins	$15
Wm. B. Ready	Sacramento	One trotting buggy	Diploma.
Wm. B. Ready	Sacramento	Farm wagon	$15
Pollard & Carvill	San Francisco	One two-horse family carriage	Diploma and $30

VEHICLES—Continued.

Exhibitor.	Residence.	Article.	Premium.
Pollard & Carvill.....	San Francisco..	One one-horse family carriage	Diploma and $25
Pollard & Carvill.....	San Francisco..	Two top buggies..... Committee recommend the gold medal to Pollard & Carvill.	Diploma and $20
Kimball Manufacturing Co.....	San Francisco..	Two two-seated open carriages.....	Silver medal.
Kimball Manufacturing Co.....	San Francisco..	Five open buggies.....	Silver medal.
Kimball Manufacturing Co.....	San Francisco..	One case plated ware, consisting of specimens in plating of carriage tips, etc.....	Diploma.
—— McKibben.....	San Francisco..	Two patent iron wheelbarrows	Diploma.
Henderson & Clark..	Stockton	One three-quarter trotting wagon.....	Diploma and $15
E. Soule.....	Sacramento.....	Farm wagon.....	...$15 and silver medal.
Weister & Faighn...	Sacramento.....	Top buggy.....	Diploma.

THIRD DEPARTMENT.

SILK.

Exhibitor.	Residence.	Article.	Premium.
Edward Muller.....	Nevada City...	Best exhibition of the silk business, from the mulberry tree to cocoon, including feeding of the worms, their eggs, etc.....	$50

FABRICS MADE FROM CALIFORNIA SILK.

Exhibitor.	Residence.	Article.	Premium.
Edward Muller.....	Nevada City...	Best pound of reeled silk, made in family.....	$10
Edward Muller.....	Nevada City...	Best sample of cocoons.....	Honorable mention.
Joseph Newman.....	San José..... ...	Best specimen silk manufacture, not less than five yards	$20
Joseph Newman.....	San José.....	Best pound of sewing silk made in family.....	$10
Joseph Newman.....	San José.....	Best specimen of raw silk goods.....	$10
Joseph Newman.....	San José.....	Best pair silk stockings.....	$10

FABRICS MADE FROM CALIFORNIA SILK—Continued.

Exhibitor.	Residence.	Article.	Premium.
Joseph Newman	San José	Best pair silk gloves	$10
Joseph Newman	San José	Best silk shawls	$20
Joseph Newman	San José	Best silk cravat	$10
Joseph Newman	San José	Best piece of pocket handkerchiefs	$10
Joseph Newman	San José		Also such honorable award as the society may see fit.
Mrs. S. A. Sellers	Antioch	For an interesting exhibit of the silk business	Silver medal.
California Silk Manufacturing Co.	San Francisco.	For a valuable exhibition of raw and sewing silk	Special—Silver medal and diploma.
Tobin, Davisson & Co.	San Francisco.	American manufactured silk goods — manufactured by Cheney Brothers	Special—Silver medal and diploma.
M. Kraker	Sacramento	Fine display of gentlemen's and ladies' underclothes and furnishing goods	Special—Silver medal.

NEEDLE, WAX AND SHELL WORK, CLOTHING, HATS, CAPS.

Exhibitor.	Residence.	Article.	Premium.
Oakland Mills	Oakland	Exhibition of jute goods	Silver medal.
S. Wilzinski & Co.	Sacramento	Best exhibit of gent's and boy's clothing	Diploma.
Madam Anna Getz	San Francisco.	Wax work flowers	$5
Madam Anna Getz	San Francisco.	Group of wax work flowers	$5
Madam Anna Getz	San Francisco.	Wax fruits	$5
Madam Anna Getz	San Francisco.	Funeral wreaths	Silver medal.
Mrs. A. O. Cook	San Francisco.	Wax flowers, wax shells, and statuary	Silver medal.
Miss Belle Maguire	Sacramento	Cross and pond lily, wax	Special mention.
Mrs. C. Cook	San Francisco.	Hair jewelry, fine device of hair work, sea moss	Silver cup—$15
Mrs. Carrie E. James	Sacramento	Sea moss	Napkin ring.
Mrs. E. M. Skaggs	Sacramento	Hair wreath	Silver medal.
Mrs. S. Sims	Sacramento	Hair wreath	Napkin ring.
Mrs. R. W. Murphy	Sacramento	Best display of millinery	$20
Mrs. S. Sims	Sacramento	Best crochet shawl	$5
Mrs. R. W. Murphy	Sacramento	Best velvet bonnet	$5
Mrs. R. W. Murphy	Sacramento	Best variety artificial flowers	$5
Mrs. W. C. Barrett	Sacramento	Best silk bonnet	$5
Mrs. W. C. Barrett	Sacramento	Best group artificial flowers	$10
Mrs. C. Cook	San Francisco.	Best embroidered rug	Napkin ring.
Mrs. W. F. Hicks	Sacramento	Best embroidered chair seat	$5
Mrs. W. F. Hicks	Sacramento	Best embroidered ottoman	$5
Mrs. W. F. Hicks	Sacramento	Second best silk embroidery	Diploma.
Mrs. Evaline Morris	San Francisco.	Best gentlemen's shirts	$5
Woman's Coöperative Union	San Francisco.	Second best gentlemen's shirts	Special.
Woman's Coöperative Union	San Francisco.	Fine sewing	Special.

NEEDLE WORK, SHELL WORK, ETC.—Continued.

Exhibitor.	Residence.	Article.	Premium.
Woman's Coöperative Union	San Francisco	Best knit stockings	$3
Woman's Coöperative Union	San Francisco	Second best crochet work	Special.
Woman's Coöperative Union	San Francisco	Best silk embroidery	$5
Woman's Coöperative Union	San Francisco	Best exhibit and greatest number of articles	Diploma and $10
Mrs. A. J. Aiken	Sacramento	Best tatted collar	$3
Miss J. M. Pierce	Sacramento	Second best tatting	Special.
Miss J. M. Pierce	Sacramento	Second best bead work	Special—$3
Miss Sallie Russell	Sacramento	Best chenile work	Special—$5
Miss Anna Gherber	Sacramento	Lamp stand	$3
Miss Lizzie Allen	Sacramento	Sofa pillow	
Miss J. M. Pierce	Sacramento	Best flower work	$5
Mrs. S. F. Chamberlain	Sacramento	Best cone work	$5
Mrs. M. Lamerkin	Sacramento	Best skeleton leaves	Special—diploma.
Miss Mary E. Hanlon	Sacramento	Best shell work	$5
Miss Carrie James	Sacramento	Second best shell work	Special.
Miss Mary Packard	Santa Barbara	Best embroidered picture	$10
Miss Mary Gœthe	Sacramento	Second best embroidered picture	Special.
Mrs. L. A. Cole	San Francisco	Best afghan	Diploma.
Mrs. R. L. Jones	Sacramento	Model for dress fitting	Special—diploma.
Mrs. J. H. Carrington	Florin	Best patch work quilt (log cabin)	$5
Mrs. E. W. Anderson	Sacramento	Best silk quilt	$5
Miss Jennie Bradley	Sacramento	Best white quilt	$5
Mrs. S. M. Hoaver	Elk Grove	Best coverlet	$5
Mrs. J. P. Odbert	Sacramento	Best knit bedspread	$5
Mrs. A. S. Greenlaw	Sacramento	Best hearth rug	$5
Mrs. M. A. Joy	Sacramento	Second best hearth rug	Special.
Mrs. Alexander Mackay	Sacramento	Best rag carpet	$10
Mrs. Charles N. Rhodes	Sacramento	Best ornamental needle work	$5
M. Freud	San Francisco	Shoulder brace corset and hoops	Diploma.
Mrs. Asbury & Crase	San Francisco	Magic curler	Diploma.
Mrs. S. M. Hoaver	Elk Grove	Best knit stockings	$3
Mrs. H. T. Lowery	Sacramento	Walking dress	Diploma.
Miss J. M. Pierce	Sacramento	Crochet work	Napkin ring.
Mrs. M. Lamkin	Sacramento	Skeleton leaves	Diploma.
Miss Sallie Coons	Elk Grove	Wreath of feather flowers	Napkin ring.
Mrs. R. Jones	Sacramento	Model of dress fitting	Diploma.
Mrs. J. H. Roberts	Sacramento	Tatting tidy and tatting collar	Special mention.
Mrs. Barney Clark	Sacramento	Hair wreath and seed wreath	Napkin ring.
Mrs. T. E. Coleman	Knight's Landing	Worsted wreath	Napkin ring.

CHINESE AND JAPANESE GOODS.

In consideration of the great prospective good that must result to our State and the whole Pacific Coast from the opening of the Japan and China trade, this committee would recommend, as a testimonial of our recognition of this good, that a silver goblet or medal—with a token of welcome engraven thereon—be awarded to each of said exhibitions.

Exhibitor.	Residence.	Article.	Premium.
Chauby, Masauki & Co.	San Francisco.	Exhibition of Japanese goods	Silver goblet—$25
D. D. J. Magowan	Shanghai	Exhibition of Chinese goods.	Silver goblet—$25

SADDLERS' AND SHOEMAKERS' WARE AND MISCELLANEOUS ARTICLES.

Exhibitor.	Residence.	Article.	Premium.
J. W. Todd	Sacramento	Best pair dress boots	$5
J. W. Todd	Sacramento	Best pair heavy boots	Framed diploma.
F. X. Kast	San Francisco.	Best pair gents' dress shoes	$5
F. X. Kast	San Francisco.	Best pair ladies' gaiters	$3
F. X. Kast	San Francisco.	Best pair ladies' slippers	$3
F. X. Kast	San Francisco.	Best display ladies' shoes	Diploma.
James Parsons	Sacramento	Best pair ladies' bootees	$3
Liddle & Kaeding	San Francisco.	California made rifles. The committee consider the display the best coming under their observation, and recommend	Silver medal.
E. S. Scranton	San Francisco.	Rustic window shade	Diploma.
J. H. Mooney and G. A. Lord	San Francisco.	Improved gopher and squirrel trap	Diploma.
J. H. Mooney	San Francisco.	Improved tuck mark for sewing machines	Diploma.
R. K. Wick	Sacramento	Display of undertakers' goods, casket, etc	Diploma.
S. K. Dodge	Sacramento	Display of buckskin gloves	Diploma.
D. Samuels	San Francisco.	Display of gloves and mittens	$3
G. Reichert	Sacramento	Best display of saddletrees	$3
D. H. Quinn	Sacramento	Best silk hat	$5
J. C. Meussdorffer	Sacramento	Best soft hat	$5
Patterson & Russel	San Francisco.	Best display of shoemakers' lasts	$5
S. H. Sheplar & Co.	San Francisco.	Holt's patent rubber type marking wheel or lightning printer	Silver medal.
S. H. Sheplar & Co.	San Francisco.	Rubber hand-stamps and New York dater	Diploma.
John Ashton	Tomales, Marin County	Dutton's improved harness	Diploma.
P. Caduc	San Francisco.	Best wood pavement on exhibition	Diploma.
Henry Campbell	San Francisco.	Patent treadle for sewing machine	Diploma.
Henry Campbell	San Francisco.	Lamp-bracket for sewing machine	Diploma.
E. H. Parker	Sacramento	Best display of saddles	$10
E. H. Parker	Sacramento	Best farm harness	$10
James Hartley	Sacramento	Fleece of fine wool	Honorable mention.
A. Brooks	Sacramento	Shoe lasts	Diploma.

FOURTH DEPARTMENT.

CABINET WARE.

Exhibitor.	Residence.	Article.	Premium.
George E. Phelan....	San Francisco..	Best California made billiard table, California laurel and black walnut, with Eureka wire cushions.....	 Second—Diploma.
C. B. Pennington....	Sacramento.....	Diamond mahogany hat rack.	Honorable mention.
John Breuner.....	Sacramento.....	Best dressing bureau.....	$10
John Breuner.....	Sacramento.....	Best sofa lounge.....	$5
John Breuner.....	Sacramento.....	Best extension table.....	 $5
John Breuner.....	Sacramento.....	Best office chair.....	$5
John Breuner.....	Sacramento.....	Best set parlor chairs.....	$10
John Breuner.....	Sacramento.....	Best book case.....	$5
John Breuner.....	Sacramento.....	Best set parlor furniture.....	$20
John Breuner.....	Sacramento.....	Best sick chair or couch.....	$5
John Breuner..... ..	Sacramento.....	Best display of furniture.....	$20
Jacob Strahle & Co..	San Francisco..	Best billiard table, wire cushions, California laurel and birdseye redwood, California invention.....	Silver medal.
Jacob Strahle & Co..	San Francisco..	Best set bedroom furniture, California laurel and birdseye redwood.....	$20
Jacob Strahle & Co..	San Francisco..	Best center table, made of twenty different California woods	$5
Jacob Strahle & Co..	San Francisco..	Best ladies' work-boxes.....	Honorable mention.
Jacob Strahle & Co..	San Francisco..	Mosaic inlaid floor.....	Diploma.
A. S. Hallidie	San Francisco..	Wood carpet.....	Diploma.
N. P. Langland.....	Sacramento.....	Black walnut and laurel newels, rails, and bannisters for stairway of State Capitol.....	Honorable mention.
Cooley & Green.....	Sacramento.....	Crandall's patent spring bed..	Diploma.
W. J. T. Palmer & Co.....	San Francisco..	Principal school teacher's desk.....	Diploma.

WOODEN WARE.

Exhibitor.	Residence.	Article.	Premium.
Nichols, Falvey & Co.	Sacramento.....	Assortment of wooden ware, Cal. cedar and pine.....	 $10
Nichols, Falvey & Co.	Sacramento.....	Best display of wooden ware..	 $50
A. J. Biglow..... ..	Sherman Isl'nd	One bundle basket willow.....	Honorable mention.
C. Shafer.....	Sacramento.....	Best two oval wine casks.....	 $10
W. C. Palmer.....	San Francisco..	Best writing desk.....	 $5
W. F. Palmer.....	San Francisco..	Best school desks.....	 $5
Pacific Wood Preserving Company.	San Francisco..	Display of preserved woods for various purposes.....	Silver medal.

PHILOSOPHICAL INSTRUMENTS, ETC.

Exhibitor.	Residence.	Article.	Premium.
J. F. Uhlhorn	Sacramento	For extention sidesticks or printer's furniture	Diploma.
Edward Dillon		For best marine chronometers	Diploma.

GLASS, CROCKERY, STONEWARE, ETC.

Exhibitor.	Residence.	Article.	Premium.
Mocker & Quale	San Francisco	Best plaster paris	Honorable mention.
Adams, McNeill & Co	Sacramento	Best powder	Diploma.
Withingham & Bagley	Sacramento	Best pyramid washing soap and powder	Diploma.
N. Siebert	San Francisco	Best lubricators for oiling steam cylinders	Diploma.
Miss. Candle Works	San Francisco	Best assortment of sperm, chemical wax, solar sperm, coach, hotel and solar candles	Silver medal and dip.
Yount & Fletcher	Sacramento	Best paint, manufactured by Cal. Chemical Paint Co	Diploma.
Colby & Brock	Mormon Isl'nd	Best sample Cal. raised opium and poppy seed	Special—Diploma.
Thomas O'Neil	San Francisco	Best sample cut glass, door plates, church windows and sample stained glass	Diploma.
W. Clark & Co	Sacramento	Best fire brick	$3
W. Clark & Co	Sacramento	Best pottery of various kinds	Silver medal.
W. Clark & Co	Sacramento	Best stoneware	Diploma.
W. Clark & Co	Sacramento	Best drain and flooring tile and sewer pipe	Special—$5

CHEMICALS.

Exhibitor.	Residence.	Article.	Premium.
B. R. Sweetland	Sacramento	Best ivory black	$5
B. R. Sweetland	Sacramento	Best Prussian blue	$5
B. R. Sweetland	Sacramento	Best copal varnish	$5
B. R. Sweetland	Sacramento	Best glue	$5
B. R. Sweetland	Sacramento	Best prussiate of potash	$5
B. R. Sweetland	Sacramento	Best white lead	$5
B. R. Sweetland	Sacramento	Best lard oil	$5
B. R. Sweetland	Sacramento	Best castor oil	$10
B. R. Sweetland	Sacramento	Best linseed oil	$10
J. F. Fugazi	Sacramento	Best Oriental oil hair dye	Silver medal.
Van Winkle & Davenport	Sacramento	One box borax, from Wadsworth, Nevada	Honorable mention.

MINERALS.

Exhibitor.	Residence.	Article.	Premium.
Henry G. Hanks	San Francisco	Collections of minerals	Silver medal.
Henry G. Hanks	San Francisco	Collection of fossils	Diploma.
Phœnix Quicksilver Mine	Napa	Specimens quicksilver ore	Honorable mention.
E. F. Howett	Grand Island, Colusa Co.	Best lot of iron ore	Honorable mention.

WORKED METALS, STOVES, ETC.

Exhibitor.	Residence.	Article.	Premium.
J. E. Parker	Sacramento	Best carriage harness	$10
Elworthy & Duperow	Sacramento	Best sash holder and lock	Diploma.
C. Hunter	Clyde, Ohio	Best pruning knives	Diploma.
W. H. Earl	Sacramento	Best tin milk cans	Diploma.
S. H. Davis	Sacramento	Best display of mechanics' tools	$10
Thomas H. Selby & Co	San Francisco	Five kegs shot	Diploma.
Thomas H. Selby & Co	San Francisco	Best display of plumbers' goods and wares	Diploma and $10
John Burns	Stockton	Best display of horse shoes	Diploma and $5
A. Brooks	San Francisco	Champion roller skates	Diploma.
G. A. Lloyd	San Francisco	Double action spring door hinge	Diploma.
A. Hunter	Napa City	Variety of mill augurs	Diploma.
John Ashton	San Francisco	Best harness	Diploma.
Yale Lock Manufacturing Co	San Francisco	Best display of locks	$5
A. L. Fish		Knowles' patent steam pump.	Silver medal and diploma.
Elworthy & Duperow	Sacramento	Sash holder (California invention)	Diploma.
Goddard & Co	San Francisco	Cast iron pipes for gas or water, cast by the new vertical process for the Metropolitan Gas Company	Diploma and special.
F. P. Howard, agent	San Francisco	Gates for gas, water or steam (Chapman patent)	Diploma.
R. Savage	San Francisco	Empire range (California manufacture—wood)	Diploma and $5
Gillig, Mott & Co	Sacramento	French range (Eureka, California manufacture)	$10
Gillig, Mott & Co	Sacramento	Prindal's farmers' cauldron and steamer	$5
R. C. Terry & Co	Sacramento	Portable hot air furnace	$5
R. C. Terry & Co	Sacramento	Best display of kitchen and tinware	Diploma and $10
J. G. Covey	St. John, N. B.	Cooking apparatus (Eastern manufacture)	Diploma.
Asphaltum Pipe Co	San Francisco	Asphaltum pipe	Diploma.
M. Barthel	Pacheco	Farm gate	Diploma and $15

MUSICAL INSTRUMENTS.

Exhibitor.	Residence.	Article.	Premium.
L. K. Hammer	Sacramento	Best grand piano (manufactured by Chickering & Co).	$20
L. K. Hammer	Sacramento	Best square piano (manufactured by Chickering & Co).	$20
L. K. Hammer	Sacramento	Best parlor piano (manufactured by Chickering & Co).	$10
John F. Cooper	Sacramento	For Mathushek "Colibri" piano	Silver medal.
John F. Cooper	Sacramento	For fine Derrick & Felgemaker portable pipe organ	Diploma.
John F. Cooper	Sacramento	Reed organ	Diploma.
John F. Cooper	Sacramento	Silver flute	Diploma.
William G. Badger	San Francisco.	Hallet & Davis' pianos	Special mention.
R. C. Marsh	Sacramento	Hews' piano	Special mention.

FIFTH DEPARTMENT.

CHEESE.

Exhibitor.	Residence.	Article.	Premium.
J. R. Jewel	Petaluma	Best cheese under one year old	$10
Samuel Cole	Gilroy	Best cheese one year and over	$15
Samuel Cole	Gilroy	Sweepstakes on cheese—for the largest and best display of cheese	Diploma and $20

BUTTER.

Exhibitor.	Residence.	Article.	Premium.
William Johnston	Richland, Sacramento Co.	For best lot ten pounds butter in rolls	$10
E. F. Aiken	Sacramento	Best firkin of butter not less than twenty-five pounds, and three months old	$15

BREAD AND CEREAL FOOD.

Exhibitor.	Residence.	Article.	Premium.
Mrs. J. H. Wolf	Brighton	Best domestic wheat bread	$5
Mrs. J. H. Wolf	Brighton	Best domestic brown bread	$5
Mrs. E. F. Aiken	Sacramento	Best domestic corn bread	$5
Mrs. J. H. Wolf	Brighton	Best biscuit	$2

HONEY, CANNED FRUITS, PICKLES, ETC.

Exhibitor.	Residence.	Article.	Premium.
J. S. Harbison	Sacramento	Best ten pounds honey and beeswax	$5
Mrs. E. F. Aiken	Sacramento	Best canned tomatoes	$3
Mrs. J. P. Odbert	Sacramento	Best canned blackberries	$3
Mrs. E. F. Aiken	Sacramento	Best canned raspberries	$3
Mrs. E. F. Aiken	Sacramento	Best canned peaches	$3
Mrs. G. G. Brown	Sacramento	Best canned pears	$3
Mrs. E. F. Aiken	Sacramento	Best canned apples	$3
Mrs. E. F. Aiken	Sacramento	Best canned quinces	$3
Mrs. E. F. Aiken	Sacramento	Best canned cherries	$3
Mrs. J. P. Odbert	Sacramento	Best canned gooseberries	$3
Mrs. E. F. Aiken	Sacramento	Best canned currants	$3
Mrs. E. F. Aiken	Sacramento	Best canned grapes	$3
Mrs. E. F. Aiken	Sacramento	Largest and best varieties of canned fruit	Diploma.
Mrs. J. P. Odbert	Sacramento	Largest and best varieties of canned jellies	Diploma.
Mrs. N. Clark	Sacramento	Largest and best varieties of canned preserves	Diploma.
Mrs. J. P. Odbert	Sacramento	Best apple jelly	$3
Mrs. J. P. Odbert	Sacramento	Best currant jelly	$3
Mrs. E. F. Aiken	Sacramento	Best peach jelly	$3
Mrs. N. Clark	Sacramento	Best quince jelly	$3
Mrs. N. Clark	Sacramento	Best preserved quinces	$3
Mrs. N. Clark	Sacramento	Best preserved peaches	$3
Mrs. N. Clark	Sacramento	Best preserved pears	$3
Mrs. N. Clark	Sacramento	Best preserved apples	$3
Mrs. E. F. Aiken	Sacramento	Best preserved plums	$3
Mrs. J. P. Odbert	Sacramento	Best tomato catsup	$3
Mrs. J. P. Odbert	Sacramento	Best cucumber catsup	$3
Mrs. J. P. Odbert	Sacramento	Mushroom catsup	Premium recom'ded.
Mrs. E. F. Aiken	Sacramento	Best pickled gherkins	$3
Mrs. J. P. Odbert	Sacramento	Best pickled peaches	$3
Mrs. J. P. Odbert	Sacramento	Best pickled tomatoes	$3
Mrs. E. F. Aiken	Sacramento	Best pickled onions	$3

BACON.

Exhibitor.	Residence.	Article.	Premium.
James Asbury	Woodland	Best cured bacon and hams	Silver medal.

SIXTH DEPARTMENT.

GRAIN AND GARDEN SEEDS.

Exhibitor.	Residence.	Article.	Premium.
D. L. Perkins	Sherman Isl'd.	Largest display of grain seed.	$10
H. Cronkite	Brighton	Best two sacks white Tusean wheat	$10
A. B. Gilbert	Brighton	Best one bushel white corn	$5
A. B. Gilbert	Brighton	Best one bushel early corn	$5
R. J. Markley	Sacramento	Best one bale hops	$5
F. Heim	San Francisco	Best two sacks Surprise oats	$5
A. J. Bigelow	Sherman Isl'd.	Best one sack Australian wheat	$10
A. J. Bigelow	Sherman Isl'd.	Best one sack Little Club wheat	$10
A. J. Bigelow	Sherman Isl'd.	Best one sack Russian barley	$5
P. H. Fisher	Brighton	Best one sack yellow corn	$5
Johnson Co. Agricultural and Mechanical Society	Iowa		Diploma.
E. F. Aiken	Sacramento	Best half peck castor oil beans	$5
John Studarus	Brighton	Best half dozen watermelons.	$3
D. G. Perry	Sherman Isl'd.	Best variety potatoes	$10
D. G. Perry	Sherman Isl'd.	Best variety yellow onions	$3
D. L. Perkins	Sherman Isl'd.	Best two varieties corn (dry and green)	$5
D. L. Perkins	Sherman Isl'd.	Best summer squash	$10
D. L. Perkins	Sherman Isl'd.	Best variety tomatoes	$5
D. L. Perkins	Sherman Isl'd.	Best variety cucumbers	$3
D. L. Perkins	Sherman Isl'd.	For largest and best variety of vegetables raised by one exhibitor	$50
D. L. Perkins	Sherman Isl'd.	One sack garden peas	$3
A. B. Gilbert	Brighton	Best variety of pumpkins	$5
Henry Hyser	Sacramento	Best three green flesh muskmelons	$3
Robert Williamson	Sacramento	Best half bushel Carolina sweet potatoes	$5
Robert Williamson	Sacramento	Best half peck white onions	$3
Robert Williamson	Sacramento	Best twelve carrots	$3
Robert Williamson	Sacramento	Best half peck sweet pepper (green)	$3
Robert Williamson	Sacramento	Best half peck sweet pepper (dry)	$3
Robert Williamson	Sacramento	Best six stalks celery	$3
Robert Williamson	Sacramento	Best six Hubbard squash	$3
Robert Williamson	Sacramento	Best half peck white kidney beans	$2
Robert Williamson	Sacramento	Best half peck cucumbers	$2
Robert Williamson	Sacramento	Best half peck tomatoes	$3
V. Russell	Brighton	Best mammoth pumpkins	$5
P. H. Fisher	Brighton	Best half dozen blood red beets	$3
J. H. Wolf	Brighton	Best and greatest display of melons	$10
J. H. Wolf	Brighton	Best and greatest display of squash	$10
J. H. Wolf	Brighton	Best mountain sweet watermelon	$2
J. H. Wolf	Brighton	Best half dozen sweet corn	$3
T. S. Chamberlain	Lincoln	Best Australian wheat	$10
John Smith	Sacramento	Best sugar beets	$3
John Smith	Sacramento	Best assortment tomatoes	$5

FLOWERS.

Exhibitor.	Residence.	Article.	Premium.
F. A. Miller	San Francisco.	For the best display of growing flowers	$25
F. A. Miller	San Francisco.	Best display of cut flowers	$25
Thomas O'Brien	Sacramento	Choice collection of flowering plants	$20
Dr. J. M. Frey	Sacramento	Display of rare and beautiful flowering plants	Silver medal.
Judge E. B. Crocker.	Sacramento	Display of rare and choice plants and flowers	Silver medal.

WINES.

Exhibitor.	Residence.	Article.	Premium.
C. Detton	Stockton	Best white still wine four years old	$10
C. Detton	Stockton	Best white still wine three years old	$10
J. R. Nickeson	Lincoln	Best white still wine two years old	$10
O. H. V. Association	Sacramento	Best white still wine one year old	$10
C. Detton	Stockton	Best red still wine four years old	$10
J. R. Nickeson	Lincoln	Best red still wine two years old	$10
J. R. Nickeson	Lincoln	Best red wine one year old	$10
B. N. Bugbey	Folsom	Best white sparkling wine	$10
O. H. V. Association	Sacramento	Best port wine	$10
J. R. Nickeson	Lincoln	Best claret wine	$10
Newell & Culbertson		Best sherry wine	$10
B. N. Bugbey	Folsom	Best exhibition of wines	$20
J. R. Nickeson	Lincoln	Best brandy one year old	$10
C. G. Carpenter	Diamond Sp'gs	Best brandy two years old	$15
Newell & Culbertson		Best brandy three years old	$25
C. G. Carpenter	Diamond Sp'gs	Best peach brandy	$15
Swan Brewery Co.	San Francisco.	Best porter	Honorable mention.
Swan Brewery Co.	San Francisco.	Best pale ale	Diploma.
Schæffer & Walter	San Francisco.	Pipifax bitters	Diploma.
William Hawkins	San Francisco.	U. S. A. Indian root bitters	Diploma.
J. Renz	Sacramento	Dr. Renz's herb bitters	Diploma.
Swan Brewery	San Francisco.	Best porter, ale, and brown stout	Diploma

FRUITS.

Exhibitor.	Residence.	Article.	Premium.
O. B. Shaw	Sonoma	Best twenty varieties apples	$40
A. S. Greenlaw	Sacramento	Best ten varieties apples	$20
C. W. Hoit	Sacramento	Best twenty varieties pears	$40
J. S. Bamber	Placerville	Best ten varieties pears	$20
E. M. Smith	Coloma	Best ten varieties peaches	$20

FRUITS—Continued.

Exhibitor.	Residence.	Article.	Premium.
E. W. Gavitt	Placerville	Best five varieties peaches	$10
J. S. Bamber	Placerville	Best ten varieties plums	$20
E. W. Gavitt	Placerville	Best five varieties plums	$10
O. B. Shaw	Sonoma	Best twenty varieties grapes	$40
J. S. Bamber	Placerville	Best ten varieties grapes	$20
A. J. Biglow	Sherman Isl'd	Best single variety grapes	$10
B. N. Bugbey	Folsom	Best and greatest varieties wine grapes	$40
R. B. Blowers	Woodland	Fine exhibit grapes	Diploma.
W. S. Runyon	Sacramento	Choice table grapes	Diploma.
Robert Williamson	Sacramento	Best display of seedling fruits	$10
J. R. Nickeson	Lincoln	Best general display of fruit, embracing best and greatest varieties	$100
C. G. Carpenter	Diamond Sp'gs	General display of fruit	Silver medal.
J. S. Bamber	Placerville	Best display of dried fruits	$10
Mrs. E. F. Aiken	Sacramento	General display of dried fruits	Diploma.
Miss F. W. Smith	Sacramento	Best dried figs	$10
Mrs. E. F. Aiken	Sacramento	Best twenty-four pounds raisins	$15
Mrs. E. F. Aiken	Sacramento	Best dried prunes	$10
O. B. Shaw	Sonoma	Best half peck soft shelled almonds	$5
E. M. Smith	Coloma	Best lemon quince	Special mention.
Mrs. J. Lohman	Sacramento	Best apple quince	Special mention.
C. W. Hoit	Sacramento	Best ripe undried figs	Special mention.
		Exhibitors of fruits from Leavenworth, Kas.; Boston, Massachusetts; Lee County, Iowa; Princeton, Illinois; Keosauqua, Van Buren County, Iowa; Farmer's Club (agricultural and horticultural), Milton, Wisconsin; Grand Rapids, Michigan; Louisville, Ky.; Iowa City, Iowa; Johnson County Agricultural and Mechanical Society, Iowa City, Iowa; Virginia Horticultural and Pomological Society; Kansas State Agricultural Society; Illinois State Agricultural Society; Rochester, N. Y.; Marshal P. Wilder, Boston, Massachusetts; Fairfield, Iowa; South Pass, Illinois; Jones County, Ia.; Cedar County, Ia.; Connecticut Board Agriculture; Shanghae, China.	Honorary diploma.
O. B. Shaw	Sonoma	Best oranges	$5
O. B. Shaw	Sonoma	Best lemons	$5
J. Rutter	Sacramento	Very choice samples of a large variety of grapes. (This entry, by mistake, was not on the committee's books, and did not, therefore, claim the attention of the committee on fruit)	Silver medal.

SEVENTH DEPARTMENT.

FINE ARTS.

Exhibitor.	Residence.	Article.	Premium.
D. H. Woods	Sacramento	Best life-size photograph in oil	$20
D. H. Woods	Sacramento	Best portrait painting in oil, by California artist	$50
F. Swanwell	Sacramento	Best landscape painting in oil, by California artist	$50
John A. Todd	Sacramento	Best specimens of uncolored photographs	$20
Oscar Kaltschmidt	San Francisco	Best specimen fruit painting	$10
Howard Campion	Sacramento	Best specimen of California landscape in oil, by California artist	$20
Oscar Kaltschmidt	San Francisco	Best exhibition of paintings	Diploma and $50
Harrison Eastman & Co	San Francisco	Best fancy paintings in water colors	Diploma.
Crane & Curtis	San Francisco	Best wood engraving	Diploma.
Mrs. W. E. Brown	Sacramento	Best porcelain painting	Diploma.
Pacific Business College	San Francisco	Best specimens of penmanship	$5
O. Schrader	Sacramento	Best specimens crayon drawing	$5
Sophia P. Gregory (pupil of Espina)	Sacramento	Best specimens pen drawing	$5
Mrs. E. C. Bingay	Sacramento	Best specimens pencil drawing	$5
C. C. Devine & Bro.	Sacramento	Best sculpture	$20
C. C. Devine & Bro.	Sacramento	Best collection of marble work	$20
Charles V. Rhodes	Sacramento	Carving on wood	Diploma.
Pacific Bridge Co	Oakland	Best model bridge	Diploma.
I. W. Taber	San Francisco	Display of large and very fine plain photographs	Silver medal.
P. A. Espina	Sacramento	Best display of pen drawing and ornamental penmanship	Silver medal recommended.
Arnold Bradford	Sacramento	Crayon drawing, by a boy	Diploma.
John Allen	San Francisco	Stone seal engraving	Silver medal.
Mrs. A. E. Wood	San Francisco	Ivorytype	Silver medal.
W. C. Butler	San Francisco	Best display of wood engraving	Diploma.
F. Marriott	San Francisco	*California Mail Bag*	Diploma.
John Nehrbass	Sacramento	Statuette and mining scene in confectionery	Special—Diploma.
Henry Fisher	Sacramento	Cases fine confectionery	Special—Diploma.
Robert Cowne	Sacramento	Samples ramie plant and fiber in different stages	Special.
Buckley & Strong	Merced	Samples California raised cotton, being sample of large quantity produced this season	Special—Hon. mention
F. Foster	Sacramento	Book binding	Diploma.
H. Wachhorst	Sacramento	Splendid display of jeweler's goods	Special—Silver medal.

REPORTS OF SPECIAL COMMITTEES.

MUSICAL INSTRUMENTS.

Sacramento, September 26th, 1871.

To the Officers of California State Agricultural Society:

The committee appointed to examine musical instruments report as follows:

We find on exhibition one grand piano, one square grand, and one parlor square, manufactured by Chickering & Sons, Boston, and exhibited by L. K. Hammer, agent; one grand piano, one square grand, and two parlor squares, manufactured by Hallet & Davis, Boston, exhibited by W. G. Badger, agent; one grand square piano and one colibri, manufactured by Mathushek; two parlor gems, manufactured by Marshall & Mendenhall; one portable pipe organ, manufactured by Derrick & Felgemaker; one reed organ and one silver flute, exhibited by John F. Cooper, agent; one parlor square piano, manufactured by George Hews, Boston, and exhibited by R. C. Marsh, agent.

On examination the committee have awarded first premium to L. K. Hammer for best grand piano, best grand square, and best parlor piano, exhibited by him and manufactured by Chickering & Sons, Boston.

They would also recommend that a special premium be awarded to John F. Cooper for his Mathushek colibri piano, which to all intents and purposes answers the requirements of a boudoir piano. They also recommend a special premium for his very fine Derrick, Felgemaker & Co.'s portable pipe organ. The reed organ and silver flute exhibited by him deserve special mention.

The fine display of Hallet & Davis pianos exhibited by W. G. Badger are also deserving of special mention. As is also the piano made by George Hews, Boston, and exhibited by R. C. Marsh, agent.

Respectfully submitted,

GEO. J. GEE,
JOHN McNEILL,
G. W. WALLACE,
JOHN N. TURPIN.

BABCOCK FIRE EXTINGUISHER.

Sacramento, August 22d, 1871.

We, the undersigned, having been appointed a special committee of the California State Agricultural Society to witness a trial of the Babcock Fire Extinguisher, and report upon its merits, respectfully submit the following:

The fire was composed of a pyramid of thirteen pitch pine tar barrels, with shavings in each, the whole thoroughly saturated with coal oil, making the most inflammable pile of material that could be devised for the test; the match was then applied, and after the whole mass was completely enveloped in flames and intensely hot, the word was given to apply the stream, when in an incredible short space of time—say three and a half minutes—the fire was completely extinguished.

This satisfactory test has given us perfect confidence in the capability of the machine as a fire extinguisher, and we cheerfully recommend it to the public, and that a premium be awarded.

G. SCHMEISER,
Chief Engineer Sacramento Fire Department.
JUSTIN GATES,
Wholesale Druggist.
W. A. KIRBY,
Exempt Sacramento Fire Department.

THE SALWAY PEACH.

Your special committee appointed to examine specimens of the "Salway Peach," a special entry by E. F. Aiken, Sacramento, beg leave to report as follows:

This is a large yellow freestone peach, imported from England in eighteen hundred and sixty-four, by the late Isaac Pullen, Esquire, of Hightstown, New Jersey; introduced into California by Edward F. Aiken, proprietor of Glen Gardens, Sacramento, in eighteen hundred and sixty-eight, and fruited for the first time in the year eighteen hundred and seventy-one.

James Alexander Fulton, in his new work on peach culture, describes it as follows:

"It is a large peach, of very great beauty and good quality, nearly round, with suture well defined towards the apex; terminal point distinct. Its distinctive virtue, however, is its late ripening—several days after the Smock, which has heretofore been considered our latest variety of freestone peaches."

The specimens consist of a box, and branches loaded with fruit, but scarcely ripe enough to show their color or give their flavor and texture correctly. Your committee, however, believe that the description quoted above *is fully sustained in this exhibit*, and that the time of ripening in this locality is from the twentieth of September to October twentieth.

The character of the wood and foliage indicates hardiness and comparative freedom from curl leaf. We believe that it is a valuable acquisition to our list of fruits and worthy of the attention of tree planters.

J. S. HARBISON,
A. P. SMITH,
ROBERT WILLIAMSON,
W. H. NASH.

PRESERVED WOODS.

Sacramento, September 23d, 1871.

To the President and Directors of the State Board of Agriculture:

Gentlemen: Your special committee have examined the specimens of wood, preserved and unpreserved, decayed and sound, etc., exhibited by the "Pacific Wood Preserving Company," of San Francisco, the details of which are set forth in the accompanying catalogue issued by the company, and beg leave to report as follows:

Fencing—The fences in common use in this State are made with redwood posts and Puget Sound fir boards. The posts are riven, being selected from such portions of the tree as split the easiest, viz: the top and branches. Such of the butt cuts of redwood timber as will retain all or nearly all of their original moisture will not decay; but this is not the case with the lighter and dry portions of the tree, such as are riven into fencing and railroad ties. Fence posts should certainly all be "preserved" for economy's sake, and the durability of the boards would also be greatly increased, though this is obviously less important.

Farm Dwellings and Granaries—The foundations of these should all be "preserved"—not only to prevent dry rot or decay of any kind, but to secure immunity against vermin and insects, nearly all of which are repelled by the hydro-carbon vapor absorbed into the preserved wood.

Farm Wagons and Agricultural Implements would be far more durable if subjected to the preserving process, which is one of the most effective means known of preventing decay and shrinkage of the wood from the iron.

The Wood Preserving Company have exhibited interesting specimens of the efficacy of their process in resisting the ravages of the *toredo nivalis* or marine worm, so destructive to piles and all harbor constructions. Though the recommendation of the best materials for harbor and coast work devolves upon the Chamber of Commerce and Board of Engineers, it is of interest to the State from its relations to the consumption of timber and the preservation of forests on this coast. Indeed, it is from a conviction of the importance of making the consumption and production of timber more nearly equal that your committee base their recommendation of this wood preserving process. In Europe stringent forest laws are found necessary to prevent the drying up of streams and rivers. To increase the durability of timber is equivalent to an increase of supply, and is consequently a question of public if not political economy. We are of the opinion that all public structures for local or State use, or whenever public money is expended and wood the material employed in construction, should be built with a recognition of the scientifically demonstrated value of this process. The application of wood to ship building on this coast is referred to in the annual address to the Society, delivered by the Honorable T. G. Phelps, on the twentieth instant.

We therefore cordially recommend a special gold medal to the "Pacific Wood Preserving Company" for their meritorious exhibition of articles which could not be classed under your catalogue.

EZRA S. CARR.
W. WADSWORTH.

I concur:

CLAIMS FOR THE GOLD MEDAL FOR 1871.

FIRST DEPARTMENT.

CATTLE.

SAN JOSÉ, CALIFORNIA, December 20th, 1871.

To the Committee appointed on awards of Gold Medals of the State Agricultural Society in the first department:

GENTLEMEN: I propose to give you some reasons why I ought to have the gold medal awarded to my exhibition of Durham stock over all competitors at the late State Fair for eighteen hundred and seventy-one. I exhibited twenty-four head: one four year old bull—Glencoe—five cows, two three year old heifers, two two year old heifers, three one year old heifers, five heifer calves, two yearling bulls, and three bull calves. I will now state the number of premiums awarded to my stock at the different Fairs last Fall, beginning at the Bay District Fair. I exhibited fourteen head. The awards were as follows: Glencoe received the premium for the best bull four years old and upwards; Lady of the Lake for the best three year old cow; Lady Belle, best one year old heifer; Helen for the best heifer calf; the premium for the best herd was awarded to my stock. At the Santa Clara Valley Agricultural Fair I exhibited twenty head. The awards were as follows: Glencoe, best bull four years old and upwards; Sprightly took the premium for three years old and upwards, although she had to compete with aged cows; she also took the sweepstakes premium for all ages and breeds; Richmond for the best bull calf; Jeannie for the best heifer calf; and also the premium for the best herd. At the Stockton Fair Glencoe received the premium for the best four year old bull, and also for sweepstakes; Sprightly for the best cow three years old and upwards; Shoo Fly for the best two year old cow; White Swan for the best yearling heifer; Comet, special premium; also, the premium for the best herd. At the State Fair at Sacramento I was awarded the following premiums: Glencoe, the best four year old bull; Richmond, the best bull calf; Maggie, the best four year old cow; Sprightly, the best three year old cow; Mary Stuart, the best one year old heifer; and the premium for the best herd of any "breed not less than ten head, owned by one man;" also, made a draw for two other premiums, the first for yearling bulls, Comet, Sunlight, and Bolingbroke, the latter belonging to Werner & Hamill, of Davisville. The committee disagreed and called in the fourth man, and he awarded to Bolingbroke. The other was my two cows—Sprightly, three years old, Mary Stuart, one year old, and Mr. G. N. Swezy's Beauty, four years old. This was for sweepstakes for all ages and for any breed. The committee again disagreed and called in the

fourth man, and he gave the premium to Beauty. This shows that the competition was strong, and, further, that when the Judges had made up their minds there was no compromise.

The Fairs at San Francisco, San José, and Stockton would have done credit to any country much older than this, but the grand exhibition culminated at the State Fair. In addition to much of the stock shown at the Fairs mentioned—Mr. Moses Wick, of Butte, with sixteen head; R. M. Sparks, of Lincoln, ten head; Jesse Carr, of Monterey, eight head; Peter Saxe, ten head; R. B. Cameron, of Solano, ten head—all those mentioned above had been recently imported from Ohio, Missouri, Illinois, and Kentucky, by men of experience, for their own use, and, it is said, selected out of the best herds in those States. In addition to these, G. N. Swezy, of Marysville, ten head; Werner & Hamil, of Davisville, two yearling bulls, also imported; Robert Ashburner, of San Mateo, sixteen head; Dr. Holden, of Stockton, one aged bull; S. B. Whipple, two young bulls; Smith & Cox, of Sacramento, one three year old bull; W. F. Overhiser, of Stockton, fourteen head; John Brewster, of Galt Station, one fine three year old bull. All of these were thoroughbred Durham. Then comes J. R. Rose, of Petaluma, with a herd of Devons, as finished in form and color as can be shown by any breeder in the United States of that breed of cattle. It is due to the gentlemen above named to say that each and every one of them made a splendid exhibition; not that each animal shown was faultless, but that each showed some superior cattle, and should all have their full meed of praise for helping to make the Fair such a grand success. I will here mention some that I think could not be excelled by any stock from any country. I will begin with the exhibit of G. N. Swezy (who did good service in traveling with me among the stock men of the State to induce them to bring their stock to the State Fair)—"Kate Dunn" and "Beauty." They may have equals, but no superiors. His young cattle looked well, and to his credit he had them in a finished condition. Then I will mention "Heroine," "Bell Republic," and also "Glenwood," belonging to Mr. M. Wick, of Butte. They are splendid specimens of the Durham stock, but not in that high culture they ought to have been. Werner & Hamil's yearling bull "Bolingbroke" is among the finest of his age. I mention these because they filled my notion in form and color—not that they were better than some others that were shown. There were ninety-two head of Durham, eleven Devons, a few Ayrshires and nineteen graded—making about one hundred and thirty. In my opinion these ninety-two head cannot be beaten at any Fairs in the United States. I was awarded six premiums—some of the most important—at the State Fair, for the best bull, the best cow, the best three year old cow, the best one year old heifer, the best bull calf, and the best herd. I claim that I have produced evidence enough to entitle my exhibition of Durham stock to the gold medal, providing you think the cattle was the best on exhibition in that department; but you may incline to think that the horse department made the best exhibition. Well, in numbers they had a little over half. I admit in every class of stock the exhibition was good. In the horse department it was more than good. Some of the horses shown have a national reputation, and deservedly so—though in numbers there were but few of that class. I think that the cattle greatly predominate in the aggregate over all other classes of stock, in their wonderful size and finished form. Now, if you are in doubt as to how you ought to award the gold medal from the successful exhibition in each class of stock, and are forced to give some considera-

tion as to the true value of each class of stock to the human family to sustain life—or in plain words, to furnish food and the necessaries as well as the luxuries for all the human family, the cattle must get the medal. I think it will only be necessary to call your attention to a few facts to prove this. Beef, butter, cheese, cream, and milk go into the consumption, in whole or in part, in every family throughout the Christian world. Take your wealthy man, deprive him of the produce of the cow, what he terms the real luxuries of life, and what would supply its place—would the horse, sheep, or in fact any other or all other stock? They would not. Then come down to a poor man with a family—give him a cow, and there is food to raise his children on—and that of the best. The truth is, that more poor families are kept from poverty and suffering by the produce of the cow, than from any other one source, and sometimes, than from all others. Here I have only mentioned a few of the benefits of the cow. Just take, for instance, the item of leather—what an amount of trade it produces in a single year—what comforts it gives, and how universally it is used and in a variety of ways. Then the tallow is used for many valuable purposes. Even the bones, horns, and hoofs are valuable. Now look back through these various channels and see their magnitude. Beef feeding its millions, rich and poor feasting upon it. The same to be said of cheese, butter, cream and milk; the rich using them and esteeming them a great luxury; the poor man taking great care of his cow from the fact that she gives more and better food for his wife and little ones than ten times the amount invested in anything else. Now let me ask you to look at this matter through all its bearings in reference to the human family. Can you compute the amount it produces in money in a single year even in the United States, let alone the world? This is only the cash view of the matter. Now if you will make an attempt to estimate the blessings it produces to mankind in the matter of food to sustain life, in luxuries and in the real comforts, they swell up in magnitude until the mind becomes wearied. Now I ask is there any other single class of stock that would begin to supply their place. You can have but one answer—that is no. Then cattle should have the preference. First, because they made the best exhibition; secondly, because they are worth more to man; and lastly, as I made the best exhibition in that department I ought to have the gold medal awarded to my stock.

There is another interesting view to be taken of this subject. Look at the nations of the earth and contrast them. Take those that use the greatest quantity of beef, and at a single glance you can see their superiority, physically and intellectually. Look at the beef eating English. What nation in Europe, or elsewhere, are their equals in everything that go to make up the elements of a great people. Cooped up on a small island, their commerce extends to every part of the earth; their sails whiten every ocean. It is an old saying that "Briton rules the waves." Her soldiers have fought in every clime, and have conquered in nearly every instance. Their only failure was when she attacked the Yankee nation. It took a second trial to convince them that we were a beef eating people ourselves. What has their intellect, industry, and enterprise done for themselves and the world? Look at their manufactories of every kind—railroads, great public improvements; their vast capital meandering through every clime, entering into every pursuit of life; their language is fast becoming universal. I contend that the nations of the earth are superior to each other in proportion to the difference of beef consumed.

I think it will be admitted that the Americans are the first nation of the world, the English next, Germans next, French next; these four nations are the superiors of all other nations—if the French had been beef eaters in place of horse eaters they would have been the masters of the Prussians. There can be but one opinion, and that is in favor of the nation that consumes the greatest quantity of beef. Beef being the most nutricious meat known to man, producing a larger frame, more muscle, less disease, better health, longer life. These give vigor and freshness to the intellect. I come to the conclusion that beef has had much to do in making great men and nations. Much could be said of the horse, his splendid appearance, his grand speed on the turf, but these are but fancy; the two-twenty or the seven-nineteen and a half does not make bread for the poor, and greatly tends to idleness if not to something worse; while on the contrary—breeding of cattle leads to industry, produces food for man, has no immoral tendency, keeps young men out of town, away from the snares of the world, gives them industrious and frugal habits—taken in all its branches one of the most useful occupations in life. One more thought and I am done. In all my acquaintance through life I have observed that the man who gives strict attention to cattle has done well, and more especially in this country. Many large fortunes have been made and all have done well. While on the contrary, if horsemen have made fortunes they are exceptions to the rule.

Most respectfully, your obedient servant,

COLEMAN YOUNGER.

SECOND DEPARTMENT.

CARRIAGES AND WAGONS.

STATEMENT OF H. M. BERNARD, OF SACRAMENTO.

To the Honorable Committee on Gold Medal:

GENTLEMEN: I submit the following claim for the gold medal in the second department. I commenced carriage and light wagon work in this city nearly twenty years ago, and although nearly discouraged many times by so very many Eastern buggies and carriages being shipped to this market by capitalists, I still kept on contending with them, inch for inch, and to-day there is not one fiftieth part of the carriages and buggies imported that were fifteen years ago. Although my capital was limited indeed, I invested every dollar in the business and built thousands of dollars worth of work every year, giving employment to quite a number of hands and saving thousands of dollars to the State every year, in keeping the money among our own merchants and mechanics. My work has earned a reputation for itself, for style and durability, second to none in the State, and superior to any that can be

imported. When the State Fair was first organized in this city I was one of its supporters, and exhibited my own manufacture of carriages, wagons, hubs, and wheels from year to year, until to-day I can boast of forty-two premiums, taken at the State Fair; also, the first premium on light work, at the Mechanics' Fair held in San Francisco in eighteen hundred and fifty-seven. I also went to the upper District Fairs with my carriages and wagons, showing the people of the country what we could do in Sacramento in the manufacturing line. Both at Chico and Marysville I have been well rewarded for making a display at their Fairs, by disposing of my work and receiving twenty first premiums, besides several orders for work. This makes total premiums received from the different Fairs held in the State for my own manufacture sixty-three, besides the gold medal of eighteen hundred and sixty-nine. I refer to the books of the above societies to bear me out in this statement.

Gentlemen, I exhibited at the last State Fair, of my own manufacture, the following articles: One fine family carriage, of the latest pattern; one farmer's family carriage; six top buggies, of different styles and patterns; one light track sulky, weighing sixty-four and three-fourths pounds; one spring market wagon; one street goods wagon; also, twenty sets of white hickory carriage and wagon wheels, entered for premiums, but for want of room in the Pavilion I had to place them outside, where I exhibited fifty sets, making a prominent feature in the exhibition, as they were shown without paint. Cash value of my exhibit, seven thousand one hundred and fifty-five dollars.

I claim to have taken more premiums than any other mechanic in the State, and to have done more towards stopping imported carriage work to this State than any mechanic in my line of business. I employ none but the very best workmen, and use nothing but the best material; my lumber is always a year or two on hand before it is worked, and those who use my work will bear me out in this particular. While exhibiting my work at Marysville a few weeks ago, I was invited by Mr. Dodsworth, who keeps a livery stable there, to visit it. On doing so, I found one of my make of buggies there, in good condition, that I built sixteen years ago, and has been in constant use ever since. Another instance: I built the first two-seated carriage made in Sacramento, in the Fall of eighteen hundred and fifty-three, and sold it to Mr. Charles Justice, of Bear River, in the Spring of eighteen hundred and fifty-four. It is doing good service yet. I merely mention this to show the superiority of California manufacture over any imported article.

On the above exhibit I made this year I received six premiums, and now claim the gold medal for making the largest and most meritorious exhibit in this department.

All of which I most respectfully submit to your consideration.

Respectfully,

H. M. BERNARD,

Carriage Manufacturer, corner Sixth and L streets, Sacramento.

WAGONS AND PLOWS.

Statement of W. B. Ready, of Sacramento.

To the Committee on Gold Medals, offered by the State Agricultural Society for eighteen hundred and seventy-one:

Gentlemen: Permit me to present my claims to the gold medal for the most meritorious exhibition made in the second department of the late Fair. My exhibition consisted of two gang plows of different styles of manufacture, one trotting buggy, two farm wagons of different sizes and finish, and one self-sharpening cultivator, all of which were made at my shop, numbers three hundred and one and three hundred and three J street, Sacramento.

I claim especial merit for the Challenge Gang Plow, it being my own invention, patented as early as eighteen hundred and sixty-one, and improved by myself from time to time, until at present it has no equal in the State or United States.

The peculiar merit of this plow over all others is its light draft. The line of draft being placed at a point below a horizontal line with the top of the standard of the plow, all unnecessary weight on the wheels is avoided.

Again, all my plows of the same pattern are exact duplicates of each other, so that extras are always obtainable to fit any one of my plows in use anywhere, without delay or extra expense. The mechanical parts of this plow are simple, strong, neat, and durable. The plow can be managed easily by a boy, the power necessary to raise and lower it being half less than is necessary to perform the same objects on any other plow in use.

The trotting buggy too is built on a principle of my own discovery, and is an entirely new feature in that line. The entire vehicle weighs but one hundred and fifty-five pounds, and it will safely carry three hundred and fifty pounds. The springs are made of wood with spiral springs attached in such a manner as to secure equal strength, elasticity, and durability without the expense and weight of steel springs. If there is merit in originating or inventing labor-saving machinery superior to that of merely manufacturing it, then I claim that superior merit for the two articles above named. I have been engaged in the manufacture of agricultural implements in this State for more than fifteen years, during which time I have kept within the State hundreds of thousands of dollars, which have been distributed among hard working mechanics, whose families have resided here among us, adding wealth and prosperity to the State. The money which I have paid these people has in turn gone to the farmer to pay for the products of the farm, thus encouraging and sustaining California agriculture and California industry generally. I have at great expense furnished my shop with suitable machinery, by the use of which I am successfully competing with the importers of goods of the description I manufacture. Since the State Fair I have taken several orders for wagons of different kinds, also a great many for plows, harrows, and cultivators, and I am now building and expect to sell between this and the commencement of the new year one hundred gang plows, besides many other articles in my line.

I will here state that on account of the increased impetus given to the importing trade by the completion of the Pacific Railroad, and the

unusual drought of the past season, I have been able to meet all demands and to place my business on a sound and promising basis, and with proper encouragement and a liberal share of patronage, hope soon to be able to add still greater facilities of manufacture, and thus be of still greater benefit to the State, and defy competition from abroad.

I am glad to be able to state that the mechanical industries of the State are looking up, and the prospects of all mechanical and manufacturing trades are growing brighter. My own business in the year eighteen hundred and seventy-one has been at least double what it was in eighteen hundred and seventy.

Without further comment, I will state that I base my claim to the gold medal:

First—Upon the merit of inventing the plows and trotting buggy;

Second—Upon the fact that my exhibition embraced a greater variety of home manufactured agricultural implements than any other exhibition, and that each article exhibited by me was equal, if not superior, to similar articles exhibited by any other person.

All of which is respectfully submitted, by

Yours, etc., WILLIAM B. READY.

WAGONS.

STATEMENT OF E. SOULE.

To the Gold Medal Committee:

GENTLEMEN: As there is a gold medal to be awarded to the most meritorious exhibition in each of the seven departments, as an exhibitor in the second department I thought it proper to present to you for your consideration the following statement: With regard to the extent of my manufacture for the last twelve months, of farm, lumber, and express wagons, I have built and sold one hundred and twenty farm wagons, at an average of one hundred and sixty dollars each, amounting to near twenty thousand dollars. Have built and sold of express and other wagons to the amount of thirty-five wagons, at an average of two hundred dollars each, amounting to seven thousand dollars. Also, about five thousand dollars of repairs, making upwards of thirty thousand dollars. The above work has all been manufactured in Sacramento, and the money paid to an average of from eighteen to twenty men and for material purchased here. This money has come from Nevada, Idaho, Oregon, and from many parts of this State, and so great has been the demand for these wagons that the capacity of my works has been inadequate to fill my orders for the last eight months. Another important feature in home industry—most of these wagons have been manufactured from thimble skeins cast in this city, from patterns of my own make, amounting to some one thousand five hundred dollars the last year. Heretofore all had to be imported. The important improvements on my thimble skeins has made them preferable to any other. I have also been testing our locust of home growth for the past three years, and have found it and recommended it as being equal if not superior to any Eastern growth I have ever seen. Through my experiments and exhibitions of this timber I have called the attention of hundreds of farmers to the importance and value of the timber, and I have no doubt

it has been the means or cause of hundreds of acres of this valuable timber being planted, that will ultimately save thousands to the State in place of imported timber. As our agricultural interest has become the chief interest of this State, and the object of our State Agricultural Society is to foster all the industries of our home productions, I will briefly state there has been a large quantity of farm wagons imported from Michigan, Illinois, Wisconsin, and Indiana, amounting to over one hundred and fifty thousand dollars a year of money taken from our mechanics, our families, and our merchants, and sent away to enrich Eastern manufactures and to empoverish our State. This can be remedied by the aid and encouragement of our people, provided it is properly shown to them the importance of sustaining our home manufacturers. My object has been for the past year to do all in my power to show and prove that a success can be made in the manufacture of our farming and agricultural implements here. With the aid of capital and experienced mechanics all our farming implements can be made at a profit here, and save a large amount of money now being paid to Eastern manufacturers. I will say to your honorable Board, you have shown conclusively to me that you appreciate the importance of fostering and sustaining the industries of the country, and if in your judgment you think I am entitled to the gold medal of the Society, it will stimulate me to renew my efforts to attain the highest success in home industries.

Yours truly, E. SOULE.

CARRIAGES AND BUGGIES.

STATEMENT OF POLLARD & CARVILL, OF SAN FRANCISCO.

To the Gold Medal Committee:

As we have been awarded the first premiums at the late Fair held at Sacramento for the best display of carriages and buggies, and are competitors for the gold medal to be awarded for the manufacture of articles most useful and most meritorious to the State in the class to which we belong, we have deemed it proper to suggest to you some reasons and considerations why the gold medal should be awarded to us:

First—We are one of the oldest carriage manufacturing establishments in the State. From small beginnings and under many discouragements in former years we have finally succeeded in profitably employing and developing California labor, skill, and capital in an important branch of manufacture, and in building up and establishing a prosperous business in spite of Eastern cheap labor, capital, and competition.

Second—We are the only company on this coast that strictly confines its business to the manufacture of Clarence coaches and fine carriages, in successful competition with the celebrated establishments of Brewster and Rogers of New York; and we have made the manufacture of them our specialty, that we might secure the highest excellence and command the market on this coast.

Third—During the past year we have manufactured twenty-four first class Clarence coaches, of the value of forty thousand dollars, and about twice that amount in value of buggies and other fine carriages; three fourths of which amounts were the direct product of California skill

and labor, thus saving to the State from ninety to one hundred thousand dollars, which would otherwise have been sent out of it, and stopping the importation of Clarence coaches entirely, and other fine carriages to a considerable extent.

Fourth—The business which we have thus established upon a basis which defies competition is destined to expand in importance as the wealth and population of the State increases, until, in the very near future, it will save to and retain in the State hundreds of thousands of dollars annually, which would otherwise be sent out and lost to the State, and thus deprive large numbers of our most skilled mechanics of employment.

Fifth—We are also hoping and expecting that many of the materials required in the manufacture of carriages, in consequence of the steadily increasing demand for them created by our business, will soon be produced in our own State, thus largely extending the field of productive industry.

From these considerations we deem ourselves entitled to the gold medal to be awarded to our class, and submit our claim to your favorable consideration.

Respectfully yours,

POLLARD & CARVILL.

PATENT EXTENSION SIDE-STICK.

STATEMENT OF JOHN F. UHLHORN, OF SACRAMENTO.

To the Honorable Committee appointed to award Gold Medals:

GENTLEMEN: Having made an entry competing for a gold medal to be awarded by your honorable body, I beg leave to present the following claims:

First—It is the only practical invention introduced to the printing business invented and manufactured in California, and is being extensively used by all the leading job offices in San Francisco and Sacramento, to whom I cheerfully refer.

Second—It meets a want that has long been felt in job printing—that is, an adaptable side-stick. It can be adapted to any size form in a moment, and possesses the merit of extension without any drawback in loss of strength. The extension is unaccompanied by any change of justification, which is preserved with mathematical accuracy by the principles on which the invention is based.

Third—It is a time, labor, and material-saving apparatus. It effects an important saving of time, as it is only necessary to draw it out to adapt it to any form, and thus the use of the saw is dispensed with; the old method being to cut each size side-stick to each particular size form. It saves material as thus: with ten side-sticks of the old pattern but five forms can be locked up unless the sticks are cut down, and to waste, as well as involving loss of time, while with the "extension side-stick," comprising ten pieces, over fifty different sizes can be locked up without any waste of material, extra labor, or unnecessary loss of time. Being made of brass, they will last as long as the chases themselves, while with the wooden ones continually wearing out it is a constant expense. The importance of and gain in general convenience and saving of time will be readily appreciated by all who are familiar with the "art pre-

servative," and is apparently destined to revolutionize that particular department in which it is applied.

I will give fifty dollars to any one who can offer a practical objection to the invention.

The following are some of the many notices this invention has received by the press of California:

[From the Record.]

Useful to Printers.—John F. Uhlhorn, of this city, in H. S. Crocker & Co.'s job office, has invented and patented one of the most useful articles for a printing office that we have ever seen, the same being an extension "side-stick," an article that, while effecting an important saving in time, causes an equal economy in material, as with it there can be no cutting down to fit "forms" of different sizes nor wearing out. Any printer who sees them will at once acknowledge its great practical benefit to the craft. They will be found especially useful to country newspapers and job offices.

[From the Union.]

Extension Side-Sticks.—John F. Uhlhorn, a practical printer of this city, has invented an extension "side-stick," which has been in use in one of the Sacramento job offices for three months, and during that time, we are informed, has performed its work admirably, saving the trouble and vexation frequently experienced, in job offices especially, in fitting "side-sticks" to "forms."

[From the Reporter.]

Valuable Invention.—John F. Uhlhorn, an ingenious journeyman printer of this city, has invented and patented what is termed an extension "side-stick." [We would suggest right here that those uninitiated in the sublime mysteries of the printing business need not read any more of this item, because they won't understand it.—Reporter.] With the wooden "side-sticks" at present in use in job printing offices much trouble, vexation of spirit, and loss of time are frequently incurred in fitting "side-sticks" to "forms" required in a hurry. Considerable expense, too, results from cutting up furniture for odd sizes, etc. This contrivance puts an end to that trouble. It is an adjustable arrangement, and can be lengthened or shortened in a second to fit "forms" of any size, and no loss of strength results from its extension. The use of the saw is dipensed with by this invention; it effects a great saving in material, and the time saved will pay the cost of the article in a few weeks. The job printers of this city and San Francisco have already commenced using these time and labor savers, and all express themselves fully satisfied. Being made of brass, these "side-sticks" are not liable to wear out in a hurry. Parties desiring further information can obtain it from Mr. Uhlhorn, at the office of H. S. Crocker & Co.

I hope you will make due allowance in passing your judgment on the classification of articles in the department to which I have been assigned. My article does not strictly come under the heading of any department as laid down in the catalogue of last year, but comes better under the heading of "Useful Inventions."

Respectfully yours, JOHN F. UHLHORN.

STEAM PUMP.

STATEMENT OF A. L. FISH, OF SAN FRANCISCO.

Committee on Gold Medals:

GENTLEMEN: At the last State Fair I exhibited Knowles' patent steam pump. There being no competition it would naturally be entitled to the first premium, but as a most meritorious machine I ask that a gold medal be awarded it. The grounds upon which I would base such claim are as follows, to wit:

First—As a simple, durable, and economical apparatus for raising water for irrigating, mining, or any other purpose, it is without an equal—there being nothing so generally required on the Pacific Coast as an economical water lifter. (I would respectfully refer you to the trial by Mechanics' Institute Fair, of San Francisco, ending September ninth, eighteen hundred and seventy-one—showing a saving over the Hanscom water lifter of thirty-seven per cent, and receiving the highest premium and diploma over all other steam pumps.)

Second—This pump has no fly wheel, no intermediate connections, and is without centers or dead points, water working the valve the same as steam, consequently it will start from any point of the stroke, requiring no lever or hand work to start the valve or piston.

Third—The surfaces are all ground, requiring no rubber packing.

Fourth—The valve being positive under all circumstances, the pump may be placed down in the deepest mines connected with a steam pipe to the boiler, the pump being controlled by the engineer on top of the ground.

Fifth—The suction and discharges are all very large; the openings in the pump correspond; the valves are of large area, requiring but short lifts. Valves of different material and kinds to suit different purposes.

Sixth—The workmanship is superior and the material of the very best.

As a worthy machine, standing at the head of its class, a machine generally required and deserving the highest award, I ask you to give it a gold medal for its intrinsic worth and as an advertising card.

Yours respectfully, A. L. FISH, Agent.

BOOT SCREWING MACHINE.

STATEMENT OF NICHOLAS LUMSDEN, OF SACRAMENTO.

To the Committee on Gold Medals:

I claim a gold medal for my screw machine because:

First—It is easily made, and can screw boots on unplated lasts, which no other machine can do.

Second—When lasts are plated with iron my machine, in the hands of an ordinary workman, will screw the bottoms on from four to six dozen pairs of boots in one day; boots which are sold at from six dollars to nine dollars a pair.

Third—The price of my machine is fifty dollars; other machines cost

one hundred and twenty-five dollars to four hundred dollars to screw boots on lasts when they are plated with iron.

Fourth—My machine is not one tenth the weight of other machines, and is as strong, and will last a lifetime. It is a California invention, and patented.

For the merits above stated I claim a gold medal.

Yours truly, NICHOLAS LUMSDEN, Inventor.

GAS BURNER.

Statement of C. B. Brown, of Placerville.

To the Gold Medal Committee:

I see by an advertisement that parties applying for the gold medal at the State Fair are required to make statements of their claims for such. My claim is:

First—That my self-generating gas burner is the first and only one of this class of burners that has ever been invented in this State and secured a patent therefor.

Second—That it is the only self-generating burner that produces a perfect combustion of the gases.

Third—That it produces a clearer and whiter light than any other burner or gas machine in use.

Fourth—That it manufactures its own gas as fast as required for use, without any machine but the burner, and at a less cost than any other burner or machine for the amount of light that it produces.

Fifth—That it is perfectly safe from explosion.

Most respectfully yours, C. B. BROWN.

GAS MACHINE.

Statement of A. D. Well, of the Pacific Pneumatic Gas Company, San Francisco.

To the Gold Medal Committee:

The original inventor of this kind of works was a Mr. Rand, an Eastern gentleman, who has since become famous as the discoverer of petroleum gas. He never made it successful, nor have any of his Eastern assignees. We took hold of it, remodeled it in every part, struck upon many important improvements, some of which are patented as original inventions by members of our company, and have made these works an extraordinary success.

For a year past we have had a powerful opposition, who have not been scrupulous in their efforts to retard our progress; but the company is stronger and its machines in better repute to-day than ever.

For brilliancy of light, for economy, for simplicity, efficiency, certainty, and security, they are not only unexcelled, but there are no machines that can compare with them.

We have no customer—out of the many in California—who will say less for us.

We claim that all the distinguishing parts of these works, which are its real merits, are California inventions.

I am yours, respectfully, A. D. WELL, Secretary.

GOPHER TRAP.

STATEMENT OF GEORGE A. LLOYD, OF SAN FRANCISCO.

To the Gold Medal Committee:

GENTLEMEN: Our object in making application for the gold medal for the gopher trap exhibited at the State Fair, held September eighteenth, eighteen hundred and seventy-one, is to show the superiority it has over all others now in use, and over all others now on exhibition throughout the State. It has been acknowledged by all that have seen and used it that the animal has no escape from it. It goes for them. Large sums of money have been expended by some of our farming districts for the capture of the gopher and squirrel with but little success. Since the introduction of our trap into Alameda there have been hundreds killed, thus showing the great value of the trap. Again, it is both novel and useful.

Your award will gratify and stimulate the inventor, and will also greatly enhance the value of the invention by increasing its use.

Yours respectfully, GEORGE A. LLOYD.

ENDLESS ROPEWAY.

STATEMENT OF A. S. HALLIDIE.

To the Committee on Award of Gold Medals, State Agricultural Society:

GENTLEMEN: In explanation of the system for the economical transportation of ores, rock, etc., over mountainous countries and difficult roads, exhibited by me at the late Fair of your Society, I beg to make the following statement:

This system was invented by myself to meet a great want in the rough mining regions on this coast, and to provide means whereby material can be transported at low cost and in large quantities, thus enabling the mine owner to convey the ore from the mine to the reducing works, especially low grade ore, and under conditions and circumstances when it would otherwise be practically impossible, or nearly so.

In order to make this statement clear and intelligible, I shall have to refer to diagrams accompanying this; but I may say that the general system is by means of an endless steel wire rope, which, passing around

pulleys of large diameter at each end of the line, and being supported at intervals on guide pulleys, is set in motion and carries with it the material to be conveyed.

The complete system has been a subject of many inventions, each of which is secured by United States patents granted to me.

There is placed at each end of the line—that is, at the mine and at the reducing works or mill—a grip pulley. The function of this pulley is to transmit power to or from the endless wire rope. By reference to Figures 1 and 2 it will be seen how this is accomplished. Figure 2 is a general view of the pulley, at the circumference of which are fitted clips, which, by the pressure of the rope, close over and grip the rope, thus preventing the rope from slipping around the pulley.

Figure 1 is a section of the rim of the pulley; *h*, rope; *ii*, clips, working in recesses cast in circumference of the wheel (*LL*), and on fulcrums (*xx*). The part *K* is cast separately and bolted on to the wheel after the clips are fitted.

On the line of the route and at distances of about two hundred feet—the distance, however, depending on the configuration of the country—are erected strong posts, having cross arms (like telegraph posts) sufficiently high above the ground to clear any obstruction; these posts are well stayed and firmly planted. On each end of the cross arm are fitted sheaves or bearing and guide pulleys, in manner shown in Figure 3; and it will be seen on reference that there are two pulleys on each end of the cross arms—the upper pulley has a quarter circle groove, the lower pulley a semicircle groove; and the inner flanges of the pulleys run in close contact, but between the outer flanges there is a space equal to half the diameter of the rope; this space is left to enable the carrier (Figure 4) to pass, and the pulleys are placed as shown in Figure 3, to keep the rope in the groove of the pulleys and under control—*a* being the upper pulley, *b* lower pulley, *h* rope.

The grip pulleys at the end of the line and the guide and bearing pulleys of the posts on the line of the route being now in position, a steel wire rope made from patent tempered steel wire, and about three quarters of an inch in diameter is stretched and placed around the end pulleys and between the guide and bearing pulleys. The two ends are brought together and spliced by a long splice, thus forming an endless rope. It is obvious that if the grip pulley is set in motion by suitable gear attached to the steam engine, water wheel, or whatever power may be employed, it will actuate the rope in the direction of the pulley without difficulty, as it is supported at intervals of about two hundred feet by the pulleys, as shown in Figure 3. Now, if suitable receptacles are provided, distributed, and attached to the wire rope and so adjusted as to pass by all these pulleys and posts, the rope will convey by its motion these receptacles from one end of the line to the other. In order to obtain this result I have invented various contrivances, but will describe but the one shown in the model exhibited at your late Fair.

At distances, say fifty feet on the steel rope are attached carriers, secured to the rope by their steel clasps, which surround the rope and in form as shown in Figure 4, running off from the upper quarter of the rope and the upper side of the carrier being tangent to it—the strength of the carrier being increased in proportion to the length of the arm from the rope. On the outer end of the carrier a journal fitted with collars is turned so as to receive a suspension bar fitted to the journal, which is allowed to swing, hanging vertically by gravitation, and being bent or curved sufficiently enables it to pass by the bearing pulleys. By

referring to *c*, Figure 3, this is shown in connection with the carrier, rope, and pulleys, and will be understood at a glance.

The load usually attached to one of the carriers is from seventy-five to one hundred and fifty pounds; but I have suspended and carried eight hundred pounds on an ordinary carrier, as a kind of test load.

For conveying ore boxes or sacks one of these carriers is employed, as the load rarely exceeds one hundred and twenty-five pounds; but for a load of three hundred to four hundred pounds, two carriers are employed in manner shown in Figures 5 and 6.

The ore box is usually made self-dumping, and the frame is provided with joints necessary to enable it to turn all curves, vertical or horizontal. For still greater loads the number of carriers can be increased in like manner.

In Figures 3, 5, and 6 the arrangement of the pulleys is such that any vertical angle can be made by the rope, and the load can be conveyed over any mountain, ever so steep, or across any valley; but to turn a horizontal angle, or to pass around a spur of a hill, a different arrangement of pulleys is necessary. The manner in which this is done is shown in Figures 7 and 8.

Figure 7 shows the mode of turning an acute angle.

The projecting arms of the carrier (Figure 4) prevents the application of a horizontal pulley at the interior angle; but in the exterior angle this is the usual mode, and but one pulley is necessary.

In passing an acute interior angle two horizontal pulleys are used, the rope passing on to the farther pulley half around, thence to the nearer pulley, and thence in the direction required, in manner shown in Figure 7; the rope running in the direction of the arrows.

In passing a moderate angle or curve (Figure 8) a series of pulleys are so placed that the rope of the interior angle *leads fair* on to the pulleys, and is slightly deflected in passing off, leading fair on to the next pulley, and so on until the curve is completed. I find that the rope should not be deflected between one set of pulleys from a true line to exceed ten degrees. By referring to Figure 8 it will be seen how this is done.

Figure 9 shows another method of conveying a light car containing ore. The lower end of the suspension bar attached to the rope is fitted with a bar set at an angle and fitted with notches. The car is placed on a track slightly descending. As the notched bar comes along it passes between guides and catches a similar bar attached to and over the car, retaining it in the notches, and carries the car along the track, which being descending is separated from the car and the car is then carried along to its destination, where it strikes an ascending track which lifts the frame of the car above and away from the suspension bar, thus leaving the car behind.

Having thus described the modus operandi of my system of transportation by means of an endless rope, and which has been perfected after many years of study and experiment, in accordance with the general suggestions contained in your notice I will add some data of work and cost. Speed of rope, say 200 feet per minute; weight of each load, 100 pounds; distance between each load, 50 feet; then $\frac{200}{50} \times 100 = 400$ pounds per minute $\times$ 60 = 24,000 pounds per hour, or 120 tons per day of ten hours or 288 tons per day of twenty-four hours. The amount of ore deliverable per day can be more or less, according to requirements. The cost of construction varies according to location and work to be done, but may be placed at from five thousand dollars to seven thousand five hundred dollars per mile. The cost of delivering material, includ-

ing wear and tear, interest, and all expenses, is from fifteen to forty cents per ton per mile.

By reference to Figure 10 a general idea is conveyed of the working of this system. The distance such a line can work is limited only by the capacity of the power employed and the strength of the rope. Its most economical application would be for lines of above three miles, but there is no reason why lines of fifteen or twenty miles in length, with the steel wire ropes of the high tensile strength now made, would not work to advantage.

I conceive this of so much importance to the public generally, especially the mining public, that I ask for it your careful attention.

It is applicable to many uses other than for conveying ores from the mine to the mill, as for instance: carrying agricultural produce to the nearest depot, especially to ships in an offing; for conveying coal to gas works, or beets to the sugar mill; for carrying sand or rock to fill embankments, or grade lands; for conveying light material or passengers over any difficult road. And it has these advantages: no grading or road building is required; it can work under all circumstances of weather, with great depths of snow on the ground during heavy storms and freshets; it can run constantly without rest, as well during a dark night as a clear day; it can cross deep gorges and chasms; it can pass around precipitous bluffs and perpendicular cliffs; the rope can never leave the posts or sheaves; it can furnish and transmit power when there is sufficient descent, by its own gravitation, or by an engine attached to either end. It can be constructed and worked cheaper than any other system or road can be constructed and worked.

A. S. HALLIDIE.

October 28, 1871.

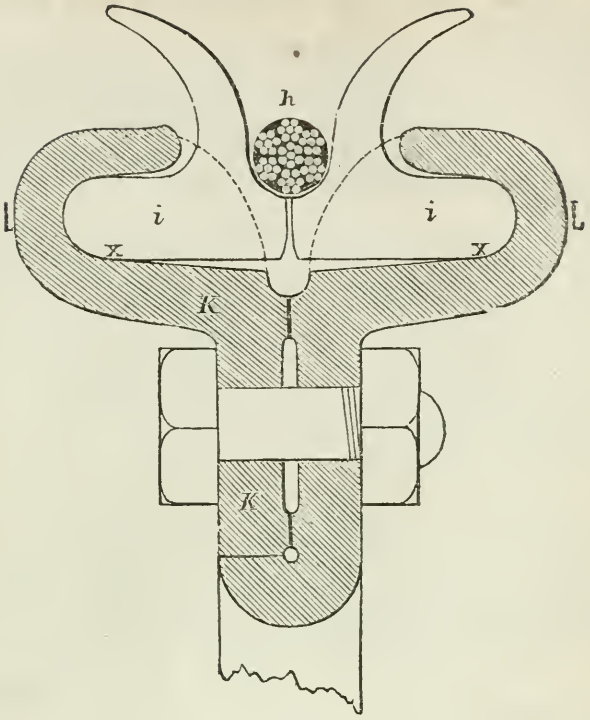


Fig. 1.

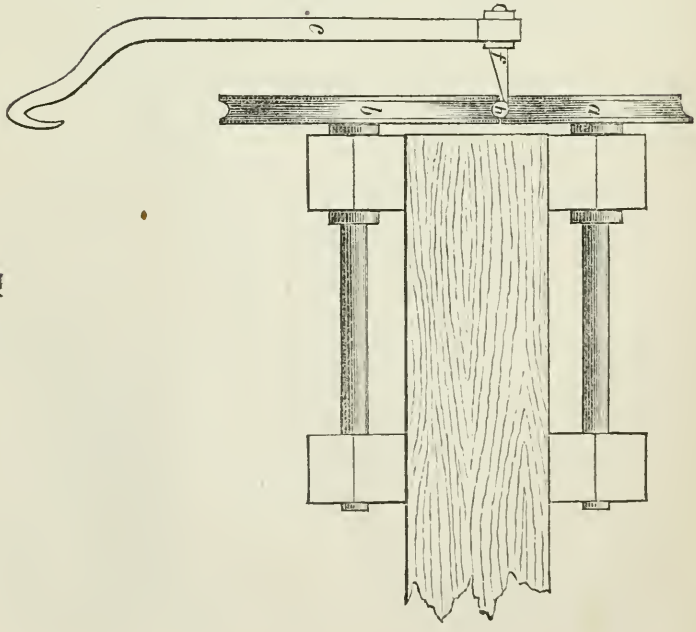


Fig. 3.



Fig. 2.

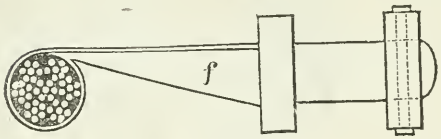


Fig. 4.

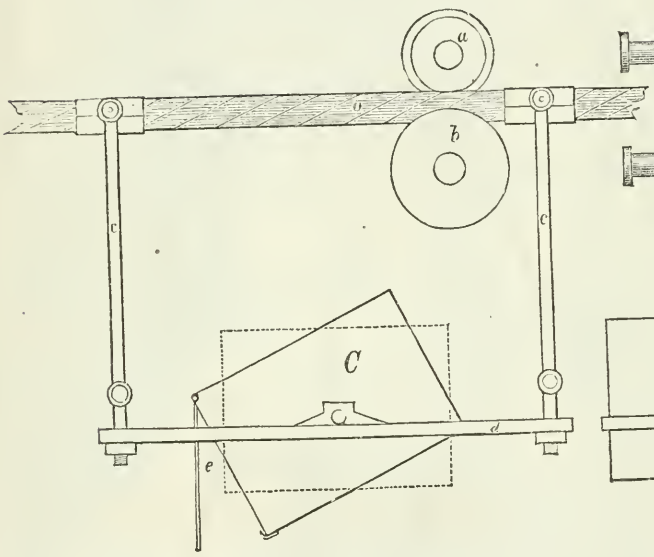


Fig. 5.

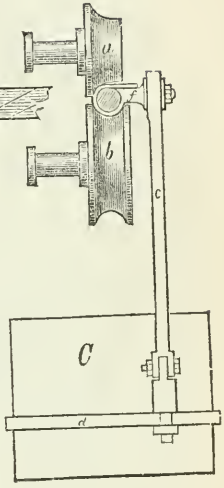


Fig. 6.

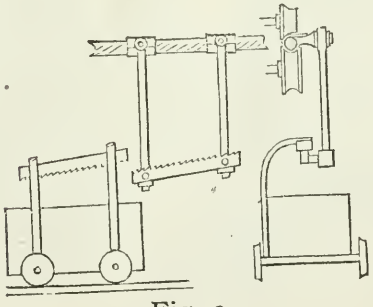
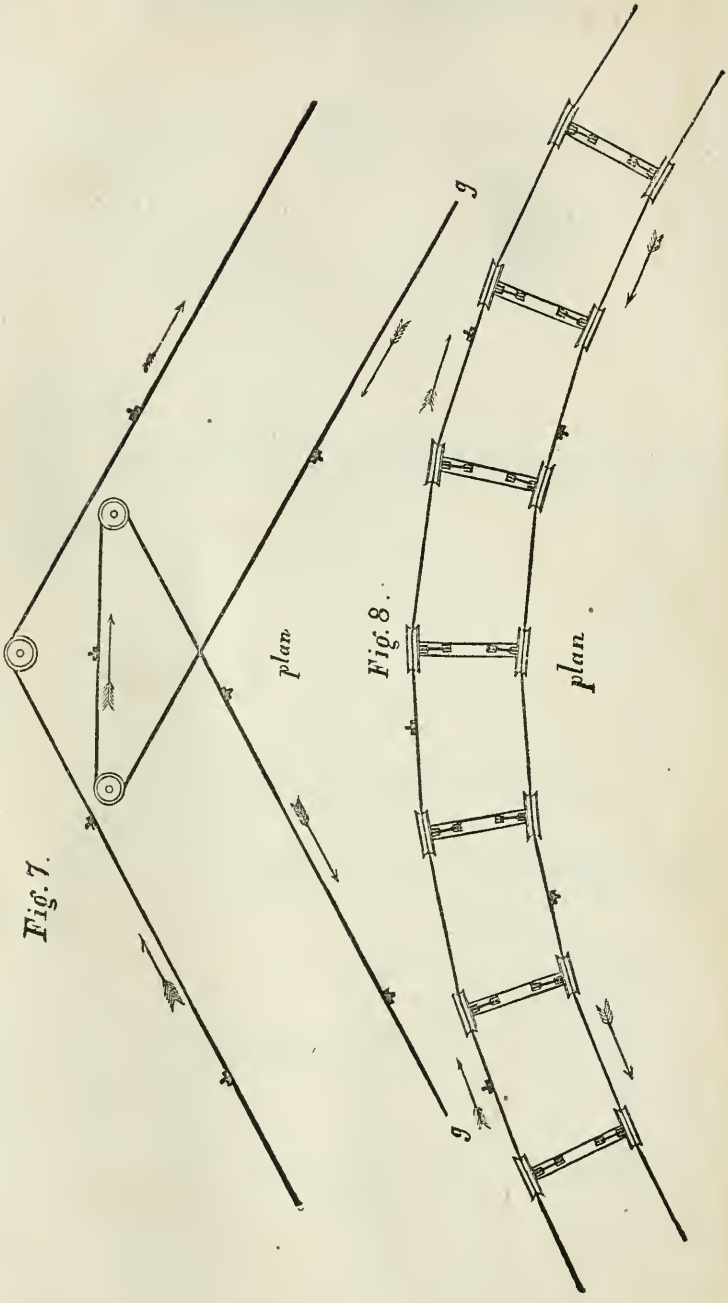


Fig. 9.


Fig. 7.
plan
g
Fig. 8.
plan
g

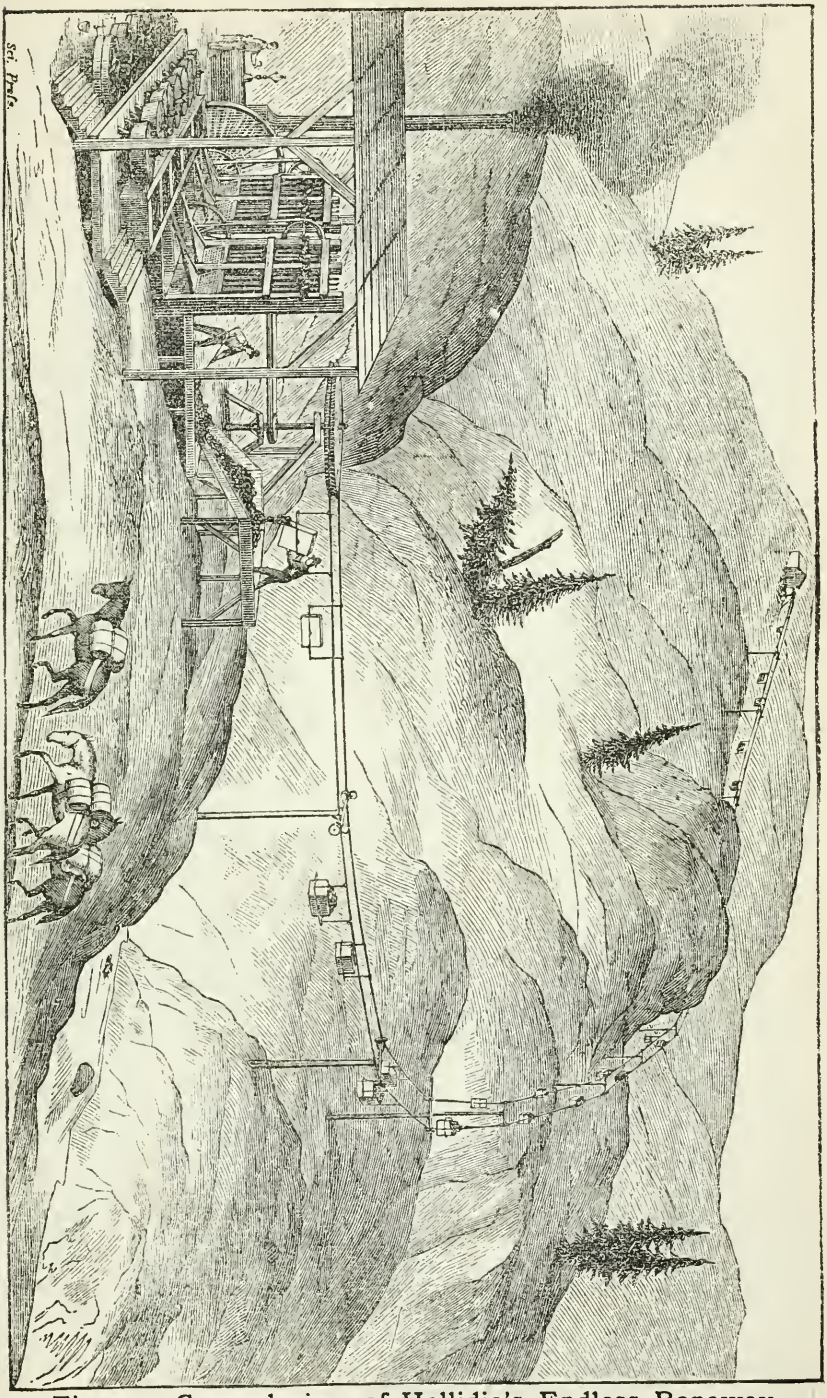


Fig. 10. General view of Hallidie's Endless Ropeway.

THIRD DEPARTMENT.

HARNESS MANUFACTURE.

STATEMENT OF J. E. PARKER, OF SACRAMENTO.

To the Committee on Gold Medals for eighteen hundred and seventy-one:

GENTLEMEN: The exhibition for which I claim the gold medal offered by the State Agricultural Society for the most meritorious display, was made in the third department, and consisted of one set of double carriage harness; one set single carriage harness; one set double team harness; five gentlemen's saddles, and one lady's saddle; also, a number of riding bridles. I do not claim the medal on the ground of a large or extensive exhibition—not considering this necessary to entitle me to merit, but my exhibition was made up of samples of the kind and quality of the work I am constantly turning out of my shop.

I believe, and have no doubt the committee will agree with me, that there is merit in quality as well as quantity. This is the principle upon which I work, and I find it to lead to success in the general actual business transactions of life, and more especially in the manufacturing business, and why not in competing for premiums and gold medals? By adhering closely to this idea I have secured a custom among men—consumers of my line of articles—who think the same as I do. Hence, a very large proportion of my work is what is called in the trade as "fine work," for which I receive the highest prices. My single harness are generally made to order at from thirty to one hundred and thirty dollars each. The same may be said of my double carriage harness, which I sell at from fifty to one hundred and seventy-five dollars per pair.

I opened a shop of my own in eighteen hundred and sixty-four, and since that time have turned out, on an average, about eight thousand dollars worth per annum. I have made it a rule to use all the California made leather in my work, when I could get it suitable for the purpose, and I will here say, to the credit of our California tanneries, that their leather commands the highest price in all the leather markets of the world, and is really a superior article for all purposes for which leather is used.

My object has uniformly been to encourage California industry, and California labor, and by adhering to this object strictly, I have been the means of doing my adopted State and her citizens at least some good. By this course, even in my humble way, many a dollar and many thousands of dollars have been kept within our borders and circulated among an industrious class of citizens and farmers, thus encouraging immigration to the State by the most practical way in the world—giving constant and reliable employment to those already among us.

I might mention here, that since my commencement in business I have been a most constant exhibitor at the Fairs of the State Society, and as my exhibitions have been meritorious, they have always received premiums. The premiums awarded me at the late Fair were the first and highest given for the articles exhibited.

Trusting that my exhibition will receive the favorable consideration of this committee,

I am, very respectfully, J. E. PARKER.

AMERICAN SILKS.

Statement of Tobin, Davisson & Co., of San Francisco.

I. N. Hoag, Esq., *Corresponding Secretary, Sacramento:*

Dear Sir: We beg leave to call the attention of your Board of Directors to the late exhibition made by us of Messrs. Cheney Bros' American dress silks, and to ask you to place the goods among the list of those for which you grant gold medals, provided you feel that you can consistently do so.

The development of this particular interest is one of great importance to this country, employing, as it necessarily does, a large amount of capital and labor, skilled and otherwise, besides keeping in the country millions of money which, in the absence of such industries, would be sent away to enrich foreign manufacturers. We submit, therefore, that anything that can be done to stimulate and encourage such enterprises should be done.

Hoping you will give the matter your careful consideration, we are,

Respectfully, TOBIN, DAVISSON & CO.

SILK CULTURE AND MANUFACTURE.

Statement of Joseph Neumann, of San José.

To the Committee on Award of Gold Medals:

Gentlemen: The merits upon which my claim for the gold medal is based are as follows:

First—In the third department all the silks I had on exhibition were of California production and the work of my own family. The articles on exhibition by my competitors were of foreign material and not manufactured in this State. Especially must I mention the showcase of sewing silk exhibited by the San Francisco Silk Manufacturing Company were not of their own make, but manufactured at Patterson, New Jersey. My exhibition in this department was one of the most meritorious, so was the expression of all the visitors.

Second—In the fifth department my exhibit of silk culture, from the eggs to the raw silk, was one of the most practical, and although the cash premium on the same has not been awarded to me, yet the general expression was that mine was the most practical in that line. Hoping that your honorable body will take the same view and award me the gold medals in the third and fourth departments, I remain,

Yours, most respectfully, JOSEPH NEUMANN.

EXHIBITION OF REELED SILK.

STATEMENT OF ED. MULLER, OF NEVADA.

To the Gold Medal Committee:

The undersigned submits the following as his reasons why his exhibit of silk at the State Fair of eighteen hundred and seventy-one should be honored with a gold medal. The producer, in my opinion, should also be a reeler of silk. The two departments of labor can be conducted by the same family with good advantage. As soon as the cocoons are produced and gathered they may be put into the water while the moth is still alive and reeled. This adds the labor and value to the product before it is put into the market. It furnishes labor to the country people. If the cocoons are put into the market before being reeled the profits of the reeling goes to the manufacturer, and the labor is performed in the city instead of the country, where the expense of living is greater than in the country, and consequently the expense of the silk itself will be increased.

Silk culture is one of those kinds of business that is most successful and most profitable when conducted in a small way in the family as an adjunct to other farming operations, rather than as a large and exclusive operation. It is one of the best and most appropriate occupations for children. It teaches them to notice and study the operations of nature; to acquire habits of thought and observation. It begets habits of industry and thrift, and accustoms them to feel the responsibility and care of something especially committed to their charge. The reeling of the silk is especially well adapted to the girls of the family. The work is light and easy, but requires the strictest attention and care, and is consequently one of the best of schools for both mind and body.

If all our people in the mountain districts would plant a few mulberry trees and raise a few cocoons each year, they would soon learn that it is one of the most pleasing and profitable of occupations they can engage in. I have taken the lead in this industry in the County of Nevada, and through my persuasion and efforts many families are more or less interested in it. We have now in the county hundreds of thousands of mulberry trees cultivated with direct reference to silk culture, nearly all of which have been planted at my instance or suggestion. A number of those who planted their trees but two or three years since, have already been greatly benefited by it. I have also taken a great deal of pains to teach the children the art of reeling the silk from the cocoon, and to inculcate the idea that the reeling should go hand in hand with the production. This fact, taken in connection with my small exhibition of reeled silk, gives to it an interest and merit which alone it would not possess, and upon this fact I base my claim in a great degree to the medal of the third department.

Others may have had more showy and more extensive exhibitions, but the circumstances connected with such exhibitions add to them no special interest or merit, except such as are usually attached to ordinary manufacturing operations of the factories of the towns or cities, while my exhibition of reeled silk indicates the beginning of an industry that if properly encouraged by the State Agricultural Society, and other local industrial societies throughout the State, will ere long do much to induce the poor people of those towns and cities to seek healthful and

remunerative employment in the country. The great evil of modern civilization is the concentration of population in the towns and cities, and he who introduces an industry, the tendency and operation of which is to counteract the centralization of population and to cultivate habits of industry, is certainly entitled to some degree of merit. In view of my efforts in this direction, which have been attended with a good degree of success, I think I am at least entitled to some consideration in connection with the gold medal.

Respectfully, ED. MULLER.

FOURTH DEPARTMENT.

PIANOS.

STATEMENT OF L. K. HAMMER, OF SACRAMENTO.

To the Committee to award the Gold Medals for the State Agricultural Society for eighteen hundred and seventy-one:

GENTLEMEN: At your request I have the honor to make the following statements:

As agent of Chickering & Sons, I exhibited in the fourth department pianos manufactured by them, as follows:

One grand piano;

One square grand piano;

One parlor square piano.

There were three other exhibitions of pianos, manufactured by as many different houses, and in order that an unbiassed and perfectly fair committee might be selected to pass upon the relative merits of the musical instruments so exhibited, each exhibitor selected one member to compose the regular awarding committee. This committee, after a careful examination and test of the instruments, awarded to each one exhibited by me the first premium. As this committee was composed of very competent gentlemen, their decision will undoubtedly be regarded as conclusive as to the relative merits of the exhibitions of musical instruments.

This question settled, the contest for merit lies between the exhibition made by myself and others of an entirely different character, but classed in the same department, such as ordinary cabinetware, woodenware, worked metals, chemicals, glass, crockery, stoneware, etc.

In comparing the workmanship on the Chickering pianos with that on the ordinary cabinetware, such as bureaus, bedsteads, etc., there certainly can be but one opinion, and that in favor of the pianos, even so far as the strictly cabinet part of the instruments are concerned. But when we take into consideration the great perfection to which the action or musical portion of the piano has been brought, the evidences of great mechanical ingenuity and merit of the very highest order are more perfect and convincing than in any other mechanical work yet made by human hands. It is proper here to state that the Chickerings

are not only manufacturers, but by their discoveries and improvements of the piano they have contributed more to the perfection of that instrument than all other American manufacturers combined.

One of the Chickerings is the inventor and patentee of the iron frame used in all the first-class pianos now made. For this invention he was awarded a first-class medal at the World's Fair at London, in eighteen hundred and fifty-three, and since that time some ninety medals from State and National Fairs in all parts of the world. For this he was also awarded a gold medal by the jury of the Universal Exposition at Paris, in eighteen hundred and sixty-seven, to which the Emperor, as an evidence of his special and personal approval, added the high distinction of the Legion of Honor. Mr. Chickering is also the inventor of the circular scale now so generally used, and which has contributed so much to the perfection of the piano; besides, many other less prominent improvements have been made by him.

The faculty of music is the most noble of the human soul. This faculty, well cultivated, brings into exercise the most exalting and most divine-like attributes of an individual, and renders him more happy and contented, and better fits him to discharge the many social and domestic duties he owes to those that by chance or choice he may be surrounded with. As with an individual so with mankind generally and with communities and nations. Hence the wisest statesmen and most enlightened educators recommend that in the education of youth, music be by no means omitted, and in all the most approved systems of modern education, music, both vocal and instrumental, is as regularly taught as the art of reading and writing, and this fact is telling in the higher moral standing of the nations who have adopted this custom.

No man or association of men has done more towards the musical education of the people of the United States in the last fifty years than have the brothers Chickering. With greater reason we may apply the same remark to the youth and people of our own State, California.

The factory for the manufacture of the Chickering pianos is the oldest, as it is the most successful, in America, having been established in eighteen hundred and twenty-three, and has been steadily increasing in capacity and in the number of instruments manufactured since that time. It now gives constant employment to over four hundred men, and thus furnishes the means of a good living to over two thousand persons. It turns out now over three thousand instruments per annum, of a value of over one million of dollars. Of this large number California receives her full share, one hundred and forty having already been sent to this State during the present year. This partiality of the people of California for the Chickering piano may well be considered as one of the best evidences of their genuine merit, for no people are more capable of a correct and discriminating judgment in regard to such matters, and none more distinguished for a universal disposition to own none but the best.

Having full faith in the superior merit of my exhibition, and full confidence in the integrity and good judgment of the committee, I submit the above statement and my claims to the gold medal for the fourth department.

L. K. HAMMER,
Agent for Chickering & Sons.

ARCTIC SALVE.

Statement of Nicholas Lumsden.

To the Committee on Chemicals:

Gentlemen: I claim a gold medal for my great Arctic Salve, because it is a California discovery, and patented. It is a sovereign remedy, and has never yet failed to cure when the directions were followed. Here in Sacramento it has been tested by men and women. Leading papers of Europe and America acknowledge it. Doctors, as great as the world has seen, recommend it, and say it is what is wanted.

Please consider the merits of my salve, and I will abide by your decision.

Yours truly,

NICHOLAS LUMSDEN, Proprietor.

MUSICAL INSTRUMENTS.

Statement of John F. Cooper.

To the Honorable Committee on Gold Medals:

Gentlemen: As the gold medal is offered for the most meritorious display in the fourth department, I would petition for it on my fine display of musical instruments, consisting of seven, all constructed on new and improved principles, of fine tone and especially adapted for our California climate, on the point of durability and compactness.

The Committee on Special Premiums have seen proper to award me a diploma for the most meritorious exhibit and a silver medal for the Mathusheh Colibri, for great power and sweetness of tone, in a small compass. A special premium was awarded for the Derrick & Felgemaker organ, and special for the Reddington cabinet pipe organ, and special for silver flute; besides, the committee made special mention for meritorious exhibit.

Hoping your committee may look upon this application for the gold medal with favor,

I remain, yours very respectfully, JOHN F. COOPER.

BILLIARD TABLES.

Statement of Jacob Straihle & Co., of San Francisco.

In addition to the premiums awarded to us, which are certainly by themselves a very flattering reward, we would most respectfully suggest that an acknowledgement of our claim to the gold medal of our department would be a justice. We claim that no other industry in our line employs more hands, and benefits the country more than we do; all the material used is of California growth or production; woods, iron, var-

nishes, etc., are all of our State. Such establishments are few, as the capital invested in the various branches of our business is over one hundred thousand dollars.

These houses are a credit to our State, and as such ought to be encouraged by the eminent men who are at the head of the State Agricultural Society, and who desire the prosperity of our State. The samples exhibited by us at the last State Fair, comprised: one new style Grecian curved billiard table with four legs, made of California woods, the carving alone cost four hundred dollars, the design of said table being of our own invention, and the first of the kind ever made; a new style cue rack, of Corinthian style, richly carved, combining cue rack, pool board, and marker—the whole of California laurel, and birdseye redwood; one set chamber furniture, of California birdseye redwood and laurel; one center table, inlaid with all kinds of California woods; ladies' work boxes, and a richly inlaid floor to match the billiard table.

We would then solicit a fair consideration for our claim from the committee of awards, and would be greatly honored by receiving the fourth department gold medal, for the best California made billiard table with the Delaney's patent wire cushion attached (a California invention.)

Hoping you will favor our claim, we shall rest certain that justice will be done to whom justice is due.

We remain your most obedient servants,

JACOB STRAHLE & CO.

WOODENWARE.

STATEMENT OF NICHOLS, FALVEY & CO., OF SACRAMENTO.

To the Gold Medal Committee:

GENTLEMEN: We submit our claims for the gold medal in the fourth department for our display of woodenware, pails, tubs, etc., to your consideration, and think we are entitled to it for the following reasons: That our productions are entirely of home manufacture; that it requires a large outlay of capital to produce them; and that by their production here it prevents the importation of these goods and serves to keep in the country much money that otherwise would be sent out of it. The business here is still in its infancy, although nearly double what it was for the previous year, with a prospect of a far greater increase for the year to come. The quantity of these goods used annually on this coast is estimated at from three to four hundred thousand dollars, and from one third to one half of which is still imported from the Eastern States, that being less by far than for the years previous to our starting the manufacture here, and the prospect is good for entirely stopping the importation in a short time.

Hoping that your committee may think favorable of our claims, we remain, gentlemen,

Yours very truly, NICHOLS, FALVEY & CO.

POTTERY AND STONEWARE.

Statement of N. Clark & Co., of Sacramento.

Sacramento, October 28, 1871.

To the Committee on Gold Medals:

Being exhibitors in the late State Fair, we herewith present our claims to the gold medal to be awarded in the fourth department. By reference to our entry you will see our exhibit consisted of pottery of various kinds—stoneware, firebrick, flooring tile, sewer pipe, and drain tile. But few are aware of the difficulties that potteries have had to labor under on this coast, as wages and material have been high, and our losses in not being acquainted with the nature of our clays have been much greater than in countries where potteries have been long established. In old established potteries the present workmen have the benefit and knowledge of perhaps several generations. Not so with us. We must be tried in the furnace; and you will readily understand the nature of the furnace when we state to you that we have had fourteen potteries to fail in this State. Having large experience in different States and on different clays we did not for a moment believe the difficulties would be so great or lasting. Eight years ago we purchased our present works; we expected to lose fifteen per cent in burning, which is five per cent above the rate of old established potteries; this would leave us a margin for profit at the prices of goods. After four years of toil we find ourselves several thousand dollars worse off than when we began; instead of fifteen per cent we have been losing forty to sixty per cent, with a poor quality of goods. Our friends tried to induce us to abandon the business, as they had failed in the same undertaking; they offered us funds to engage in other business, but not to invest in pottery. Having no stockholders to tax we concluded to tax brains and muscle a little further, and never was the saying more true than "perseverance brings its reward." We are now manufacturing at as small loss, or perhaps smaller, than any other factory of the kind in the United States, while the quality of our goods, in the line of stoneware and sewer pipe, is equal to the best.

Our experiments in firebrick warrant us in saying that we have the material, when properly combined, to make firebrick equal to any imported.

We have the past season been experimenting with underground irrigation by means of earthen pipe laid under the ground, which promises to be of vast benefit to our State, while it can be used to advantage in any soil. It seems peculiarly adapted to adobe or clay soils that derive but little benefit from top irrigation on account of the surface baking.

The manufacture of terra cotta seems to offer inducements to capitalists. I believe that one hundred thousand dollars could be profitably employed in its manufacture on this coast. Our climate is well adapted to its varied uses; our wet and dry seasons operate against wood for architectural decorations, while iron is too heavy and costly. Experiments could be made at small cost; we have plenty of room and our furnaces would answer for experiments. We tender the use of them without cost to parties that wish to experiment in this line.

We give employment to seven hands directly, and indirectly to as many more, in chopping wood and digging and hauling clay. The present season we will consume two hundred tons of stone clay, two hundred tons of earthen clay, and four hundred cords of wood.

We feel that we are entitled to special consideration at your hands for the following reasons:

First—Perseverance under difficulties;

Second—We have succeeded where others failed;

Third—We were the first to improve the quality of stoneware;

Fourth—By establishing a house at San Francisco we have been able to stop the importation of this line of goods;

Fifth—We have been the first to make firebrick that would compare with the imported;

Sixth—We have been the first to introduce stone sewer pipe on the coast;

Seventh—We have been the first to introduce drain tile and use it as a means of underground irrigation. We claim by its use that it will not require more than one third the water that will be required on the surface; that adobe or clay soils will not bake from its use. By it we can apply our fertilizers in a liquid state, thereby preventing foul seed from getting in the land. It will increase the warmth in the soil, thereby bringing our vegetables earlier into market. The same pipe can also be used as a means of drainage in wet seasons. Its use will also in a great measure neutralize our alkaline soils, as during the rainy season the alkali is brought to the surface by moisture, the pipes draining the surplus water would readily carry off the alkali that is held in solution.

In conclusion, we would say we have had a hard struggle to establish ourselves in business. The prejudice of the people has been on one side, and the importers on the other. But, happily, we have overcome the difficulties, and while we have got on the bright side of business, we would be pleased, if you think our efforts are deserving, to have the bright side of one of the gold medals to look on to remind us that our efforts have been appreciated.

All of which is respectfully submitted.

N. CLARK & CO.

CABINET WARE.

STATEMENT OF JOHN BREUNER, OF SACRAMENTO.

To the Committee to award the gold medals offered by the State Agricultural Society for eighteen hundred and seventy-one:

GENTLEMEN: Having been an exhibitor at the late State Fair, and believing my exhibition to be worthy of the award of the gold medal in the fourth department, I submit for your consideration the following statement of facts: I have for seven years been a dealer in and manufacturer of furniture and cabinetware in this State, and for a number of years an exhibitor of such furniture at the State Fairs.

This year my exhibition consisted of the following articles of imported goods:

One rosewood inlaid bedstead.

One rosewood inlaid bureau.

One rosewood inlaid washstand.
One rosewood inlaid somino.
One walnut chill head bedstead.
One walnut dupease bureau.
One walnut somino.
One walnut bedstead represt wardrobe.
One rosewood cylinder bookcase.
One extension sick chair.
Two steamer chairs.
One walnut extension table.
One walnut sideboard.
One walnut sofa, silk cover.
One walnut easy chair.
Four walnut parlor chairs.
One rosewood marble top center table.
One woven wire spring mattress.
One looking glass.
Of goods manufactured by myself, I exhibited:
One walnut chill head bedstead.
One walnut chill head bureau.
One walnut chill head washstand.
One walnut chill head somino.
One wardrobe heavy glass door.
Two embroidered work fancy chairs.
One sick entry chair.
One lady's secretary.
One double office desk, revolving shelves.
One walnut office chair, leather cover.
One walnut hat rack.
One walnut sofa, cover blue and white.
Two walnut easy chairs.
Four parlor chairs, walnut.
One walnut gilt high D. chair.
Two rosewood finish easy chairs.
Four rosewood finish parlor chairs.
One clipper lounge.

The cash value of the entire exhibition was over six thousand dollars, and the regular awarding committee awarded me nine first class premiums—more in number and more in cash value than was awarded to any other exhibitor in the same department. This fact of itself, it seems to me, should have a significance in the investigation of this committee, especially as the premiums were mostly awarded for articles of home manufacture.

While the average amount of business done by me per annum is about fifty thousand dollars, the amount or value of articles made in my own shop is about seven thousand dollars. I give regular employment to nine mechanics, from three dollars and fifty cents to four dollars per day. I have commenced this manufacturing business, not because I can with my present facilities make more money from the capital invested than I could from the same amount of capital continued in the importation of goods, but for the purpose of building up in time a business that shall keep at home some of the vast sums annually sent out of the State for imported goods.

It is estimated that the furniture annually imported into California from the Eastern States and other countries cannot be less in value than

two million five hundred thousand dollars, while there may be five hundred thousand dollars worth manufactured here. This great drain on our circulating medium to keep up the industries of other countries should and can be checked, if men of capital will study the interests of the laboring class among us, and devise ways and means for giving them constant and remunerative employment. From the experience I have had in my small way of manufacturing furniture, I am of the opinion that a large establishment with capital to operate with, so as to take advantage of circumstances, located in Sacramento, could be made to pay a handsome profit on all the money invested.

The freight on furniture is greater in proportion to the value of the goods than on most any other class of goods imported, on account of their great bulk.

Again, the average breakage and damage to fine furniture by being handled is very great; while all furniture comes in a more or less damaged state, and has to be overhauled and repaired at considerable extra expense before it can be sold. The change of climate has also a very damaging effect on furniture. For instance, furniture put up in a damp climate, like that of New York or Boston, will last a long time if used in the same climate; but if transported into a dry climate, like that of Sacramento or most parts of our State, it falls to pieces in a very few years.

The annual loss to the people of California on furniture from this cause alone is thousands of dollars, all of which might be saved if this furniture could be manufactured in the State, in the vicinity and climate in which it is used. Had I the capital to invest, I would manufacture all the furniture I sell; but being unable to do this, I claim no less merit should be awarded me, because I have demonstrated that it can be done, and I am endeavoring to induce capitalists to put their money into a joint stock company against my knowledge and skill in the business.

With these remarks I leave the matter in the hands of the committee.

JOHN BREUNER.

CANDLES.

STATEMENT OF WINTER, MAURER & CO., OF SAN FRANCISCO.

To the Gold Medal Committee:

GENTLEMEN: We desire to call your attention to the importance and extent to which the branch of domestic manufactories which we represent affects the trade and industrial manufacture of California:

First—The importation of candles in boxes, as per official records, amounts to three hundred thousand boxes, valued at over one million dollars.

Second—Tallow, heretofore exported, did not realize to shippers over six to seven cents per pound net, while now, since our factory commenced operations, it is sold here at a ready market at ten cents per pound.

Third—To furnish our factory with tallow requires not less than the fat of thirty thousand head of cattle annually; the price obtained for tallow offers a great inducement to farmers and stock raisers to increase

their stock and herds, which always tends toward the general prosperity of a State.

Fourth—The importation of candles and exportation of tallow employs but few persons, while the manufacture of candles and such other articles immediately connected with this branch of business employs a large number of hands, "exclusively white labor," whose wants create a market for all the requirements of life, and help develop kindred manufactories, such as box makers, coopers, plumbers, and gives also employment to foundries in its various branches who supply all kind of machinery, tools, etc.

Fifth—The amount of capital employed in business at present is one hundred and twenty-five thousand dollars, the profits on which are used in this State instead of being distributed in other States and cities.

Sixth—We are now engaged in building and have nearly finished building a soap factory of the largest dimensions, having not its equal on this coast. The Union Iron Works, H. I. Booth & Co., build for this establishment two kettles, holding eighty thousand pounds of soap each. When worked, which will be in a fortnight from now, we shall employ as many more hands as we do at present; besides, it will add greatly to other advantages heretofore pointed out.

Seventh—In about one month from now at the utmost we shall be in full working capacity, and propose to manufacture not less than about one half million of dollars worth of candles and soap annually, the capital of which will remain in this State and help towards furthering prosperity.

Gentlemen, we do not propose to point out any further the advantages this State will derive from any and all well conducted manufactories; they are, to such an intelligent body of men as you, sufficiently known, and in saying anything more we would be simply intruding upon your valuable time.

We beg to submit all these facts to your kind consideration, and remain with all due respect,

Your most obedient, WINTER, MAURER & CO.,
Proprietors of the Mission Candle Works.

Copartners—M. Morgenstan, Henry S. Winter, Fred. Maurer, Isador Lavenson.

San Francisco, September 30th, 1871.

FIFTH DEPARTMENT.

GRAPE AND WINE CULTURE.

Statement of B. N. Bugbey, of Folsom.

To the Committee on Gold Medals for eighteen hundred and seventy-one:

Gentlemen: Having been an exhibitor in the fifth department of the

late State Fair, and believing myself justly entitled to the gold medal for the most meritorious exhibition in that department, I accept your invitation to place before you in writing the grounds upon which I base that belief. In this department were exhibited the following agricultural products:

First—The products of silk culture—cocoons, raw and reeled silks, eggs, etc.

Second—The various kinds of grains and their products, as wheat, barley, oats, corn, etc.

Third—The products of the dairy, as butter, cheese, etc.

Fourth—All kinds of vegetables and roots.

Fifth—Flowers and all floral displays.

Sixth—The products of the vineyard—wine, brandies, etc.

I suppose that the first question to be decided is, as to which of these several divisions or classes is entitled to the greatest merit, or in other words, which is working the greatest benefit to the State by developing her peculiar resources and material advantages. What are the peculiar resources and natural material advantages of California, considered with reference particularly to the production of the articles above enumerated?

That California is a great grain raising State there is no longer any question. Her plains, her swamp lands, and even her foothills, high up among the mountains, have all been proven by experience to be among the best grain producing sections of the world, when properly and skillfully cultivated. But that same experience has also demonstrated the fact that constant and exclusive cultivation of grain impoverishes the soil and must eventually work a great injury to the State. Again, nearly all the other States and Territories of the Union are well adapted to grain raising, and we cannot therefore look to them for a market for our surplus products of grains, nor are we any way sure of a continuous foreign market at remunerative prices.

As to vegetables and flowers, while we can excell in the production of these also, by their very nature we cannot to any extent become exporters, and by their production cannot expect therefore to make money as a State, or do more than to save it to the extent of the value of the home consumption.

The same may be said of the productions of the dairy. With this exception, however, that while we have a country well adapted to this industry, we are still, to our shame, importers of its products to a very great extent. This industry should be encouraged and fostered in every way possible, but not with any view to make our State to any extent an exporter of its products, for the same sources which now supply our wants, over and above our own production, will undoubtedly continue to supply themselves.

As to silk and wine, our State has undoubtedly not only peculiar, but as relates to any other State or Territory within the Union, almost exclusive advantages. We have a climate and soil well adapted to the prosecution of both of these valuable industries, and in their productions, as before intimated, we have not only no rivals within the Union, but the people of all the other States are consumers, and will be glad to become our best customers. Not only this, but we may reasonably entertain the belief that the markets of the world cannot be over supplied with either of these products, hence we may anticipate great benefits from their successful cultivation here.

Again, the production of silk and wine does not exhaust, but rather

fosters the fertility of the soil, and the longer any particular piece of land is devoted to their production the better are the realized results. Then, too, the vine and the mulberry tree flourish and do best in the foothills, on land which is the least value for most other agricultural products, and which would be of very expensive cultivation for such products. Hence, the successful development of these new industries in our State will bring into use and make valuable millions of acres of a class of land that can in no other way be rendered of but little value. To the exhibitors of these particular classes in this department then the meed of merit will doubtless be awarded, and while I would concede great merits to the pioneers and exhibitors in the silk industry, yet I think it will be admitted that sufficient has not been accomplished in silk culture to entitle the industry to rank before that of the cultivation of the vine and the manufacture of its products.

The benefits to the State from silk culture are mostly in anticipation, while those from vine culture and wine manufacture are in a fair state of realization. This advanced stage of the latter has been brought about by the foresight, enterprise, and perseverance of a few individuals.

The whole enterprise from the beginning was a doubtful experiment. First, it had to be proved that the grapes could be grown and the wine made. Second, a long established and deep seated taste for foreign wines had to be changed, and a taste for home made wines cultivated and established before a market could be found for the home production. This taste for foreign wines was backed by a strong prejudice in their favor, and this prejudice had also to be removed. This has been a work of no small magnitude, and none but those personally and directly interested in it can realize the difficulties and discouragements the pioneers in the business have had to meet and overcome. That they have boldly met and overcome most of the obstacles to success, I have no doubt the committee will conceed, entitles the industry they have established to the highest position of merit in the department. If this position be granted then I ask the committee briefly to review the part your humble servant has acted in the accomplishment of this work.

In eighteen hundred and sixty-one, I purchased a piece of land in Salmon Falls Township, El Dorado County, upon which were then planted eight acres of vines. I gave to this place the name of "Natoma Vineyard," and since that time my best energies and all the capital I could command have been devoted to the industry. I have now one hundred and fifty-seven acres in vines, and for a number of years past I have made from grapes grown by myself, on my own land, on an average of from fifty thousand to sixty thousand gallons of wine per annum. Last year my product was sixty-six thousand gallons. During this entire time I have been constantly and carefully carrying on experiments, the object of which has been to determine: first, the varieties of grapes best adapted for making superior wines of the different kinds in California, and second, the best mode of treating those wines in this climate to secure the best results from any given variety.

For the double purpose of assisting my own judgment as to the success with which these experiments were being attended, and to establish a reputation and market for California wines in general, and my own in particular, I have taken a great deal of pains and spent a great deal of money in placing them on exhibition and competition with the wines of other producers at our own Mechanics'. and State Fairs, and also exhibited them at the Universal Exhibition at Paris in eighteen hundred and sixty-seven.

As an evidence of the high approval with which my wines have uniformly met since eighteen hundred and sixty-three, I beg to refer the committee to the following certificate of the Secretary of that society:

ROOMS CALIFORNIA STATE BOARD OF AGRICULTURE,
SACRAMENTO, December 31st, 1870.

I hereby certify that the following premiums have been awarded by the California State Agricultural Society to B. N. Bugbey, Esq., of Folsom, Sacramento County, State of California:

Date.	Article.	Premium.
September, 1863.	Best red wine, two years old and over	First.
September, 1863.	Second best red wine, one year old and over	Second.
September, 1865.	Best one variety of grapes	First.
September, 1866.	Best wine, one year old, from foreign grapes	First.
September, 1866.	Best white wine, one year old	Special.
September, 1866.	Best red wine, one year old	Special.
September, 1866.	Best exhibit of wines from foreign grapes	First.
September, 1866.	Best exhibit of wines from native grapes	First.
September, 1866.	Best brandy, one year old	First.
September, 1866.	Best twenty-four pounds of raisins	First.
September, 1867.	Best claret wine from foreign grapes	First.
September, 1867.	Best exhibit of wines from foreign grapes	First.
September, 1867.	Best grape brandy, two years old	First.
September, 1867.	Best wines from Calalyac, Johannisberg, Reisling, and Orleans grapes	Special.
September, 1867.	Best one variety Tokay grapes	First.
September, 1867.	Best twenty-four pounds of raisins	First.
September, 1867.	Best exhibition in the Fifth Department	Gold medal.
September, 1868.	Best exhibition of foreign grapes	First.
September, 1868.	Best one variety grapes for dessert or table use	First.
September, 1868.	Best twenty-four pounds of raisins	First.
September, 1868.	Superior wine, three years old, from Italian and Burgundy grapes	First.
September, 1868.	Wines from Malaga and Muscat grapes	First.
September, 1868.	Wines from Black Malaga grapes	First.
September, 1868.	Best exhibit of wines from foreign grapes	First.
September, 1868.	Best brandy, two years old	First.
September, 1868.	Best exhibition in Fourth Department	Gold medal.
September, 1870.	Best still white wine, one year old	First.
September, 1870.	Muscatelle wine	Sp. diploma.
September, 1870.	Black Prince wine	Sp. diploma.
September, 1870.	Best sparkling wine, two years old	First.
September, 1870.	Best exhibition of wines from foreign grapes	First.
September, 1870.	Best exhibition in Fifth Department	Gold medal.

ROBERT BECK,
Secretary.

This year I was awarded by the State Society:

For best sparkling wine.....First premium.
For best exhibition of wine.....First premium.
For best and greatest variety of wine grapes.....First premium.

It is proper here to say, that by a very unfortunate mistake in the entry of my wines this year, the age of the different kinds was not marked on the bottles, and as a consequence they were excluded from competition with the wines of the same age and kinds exhibited by other parties.

Some members of your committee having served on the Wine Committee will be able to explain more fully the cause and effect of this mistake. Suffice it to say it was no fault of mine, and I would not have had it occurred for one thousand dollars. In all my exhibitions at the Mechanics' Institute my wines have been equally well and highly appreciated, having been awarded a number of premiums over all other competitors, and this year the gold medal in the class in which they were exhibited. They also received high commendation from the jury of the Universal Exhibition of Paris. In addition to having secured a large trade in our own State, I have agencies for the sale of my wines, champagnes, and brandies in Chicago, Buffalo, Albany (New York), New York City, Philadelphia, Washington (District Columbia), Hartford (Connecticut), Worcester, Springfield, and Boston (Massachusetts), Manchester (New Hampshire), Little Rock (Arkansas), St. Louis (Missouri), Council Bluffs; and previous to the disastrous fire at Folsom the past season, which destroyed a large portion of my stock, I was sending forward to all of these agencies large quantities to supply a rapidly increasing demand. As will be seen by reference to my exhibition this year I also manufacture wine brandy, in order more fully to economize the product of my vineyard.

BRANDY.

I commenced the manufacture of brandy in eighteen hundred and sixty-three, and have since that time averaged about four thousand gallons per annum. My product for eighteen hundred and seventy-one was eight thousand gallons. In eighteen hundred and sixty-eight my attention was called to an improved still for the manufacture of brandy, patented by ——— Johnston. Having satisfied myself that it was a good improvement, I built and set to work the first working still ever made under the patent. The venture proved a good to myself, and the introduction and general use of this still cannot fail to be of immense benefit to the vine interest and to the State. Whatever that benefit may be, it gives me no small degree of satisfaction that through my patronage as a vine grower it was first introduced and proved of value. By the use of this still the operator can by one operation clear the brandy of the fusil oil and acetic ether and retain all the natural aroma. The same quantity of grapes or other fruits will make twenty per cent more spirits than by the old process, with twenty-five per cent less expense.

CHAMPAGNE.

I commenced the manufacture of champagne in eighteen hundred and sixty-eight. By my first year's experiments in this business my losses were not less than twelve thousand dollars. My next year's operations were more successful, and though the experience was dearly bought I am now able to produce a good article of champagne with the same certainty that I can produce from a good article of a good variety of grapes a good article of still wine. My average product of champagne since eighteen hundred and sixty-eight has been about four thousand eight hundred cases or dozens per annum. This class of wine being so much more expensive than still wines, it will be seen that their manufacture and sale at home or shipment abroad brings a proportional greater benefit to the State and its industries than the manufacture of still wines.

In this class of wines I have no competition among the exhibitors and claimants of the gold medal, and this fact alone, I submit, should be sufficient to decide the question of merit and the medal.

RAISINS.

I also exhibited samples of raisins produced by me. Very soon after engaging in the cultivation of a vineyard I determined to learn by personal experience whether a good article of raisins could not be made in California. My experiments were crowned with perfect success. I succeeded in proving that California is capable of not only supplying the one hundred and eighty thousand dollars worth of raisins annually imported, but if her people were disposed to engage in the business with energy and spirit, they could soon supply the entire demand for the whole United States. The annual importation of the United States is valued at about one million two hundred thousand dollars. The success of my efforts proves conclusively that we have a soil and climate in the western slope of the Sierra Nevada Mountains most eminently adapted to the successful and profitable prosecution of this industry. All we want to secure this entire trade and this large amount of money annually is a proper degree of enterprise, perseverance, and cheap and reliable labor. If there is any merit in having been the pioneer in an industry promising such vast resulting advantages to our State, then I am entitled to that merit, and I have no doubt the committee will award it to me. I have made and marketed some ten thousand boxes of raisins in this State, receiving for them the highest market price. The only reason why I have not made this a principal branch of my business is, that my wine, champagne, and brandy manufactures, and the cultivation and extension of my vineyard, have taken all my time. Were I relieved from the care of these departments, I should engage immediately in the cultivation and manufacture of raisins.

The following is a list of the articles exhibited by me at the State Fair of eighteen hundred and seventy-one:

One dozen bottles of Muscatel wine, vintage of 1869;
One dozen bottles of White Frontingnac wine, vintage of 1869;
One dozen bottles of Gray Reisling wine, vintage of 1869;
One dozen bottles of Black Prince wine, vintage of 1869;
One dozen bottles of Alaconte wine, vintage of 1869;
One dozen bottles of Traurina wine, vintage of 1869;
One dozen bottles of White Reisling wine, vintage of 1869;
One dozen bottles of Johannisberg wine, vintage of 1869;
One dozen bottles of White Malaga wine, vintage of 1869;
One dozen bottles of Verdelho wine, vintage of 1869;
One dozen bottles of White Nice wine, vintage of 1869;
One dozen bottles of Pedro Exomenus wine, vintage of 1869;
One dozen bottles of Orleans wine, vintage of 1869;
One dozen bottles of White St. Peter's wine, vintage of 1869;
One dozen bottles of Royal Muscatine wine, vintage of 1869;
One dozen bottles of Chambertin wine, vintage of 1869;
One dozen bottles of Zinfindel wine, vintage of 1869;
One dozen bottles of Port wine, vintage of 1869;
One dozen bottles of Sparkling Muscatel wine, vintage of 1869;
One dozen bottles of Champagne wine, vintage of 1869;
One dozen bottles of brandy, vintage of 1868;

One dozen bottles of brandy, vintage of 1869;
One dozen bottles of Alacante wine, vintage of 1868;
One dozen bottles of Reisling wine, vintage of 1868;
One dozen bottles of Camberton wine, vintage of 1868;
One dozen bottles of Muscatel brandy, vintage of 1868;
One dozen bottles of Muscatel brandy, vintage of 1869;
One dozen bottles of Catalyn wine, vintage of 1867;
One dozen bottles of Alacante wine, vintage of 1868.

GRAPES.

Pedro Zomenes, Malaga Muscatella, Pineaux, Black Hamburg, Isabella, Chasselas de Fouslambleu, Blue Malvasia, Flaming Tokay, Catawba, Fih Zagos, Orleans, Johannesberg Reisling, Grizzly Frontigon, Black Zinfindel, Red Traurina, Pride of Paris, Cerian, White Palestine, White Muscat of Alexandria, Queen of Nice, Alicante.

RAISINS.

Twenty-five pounds of raisins.

All of which I respectfully submit, trusting your committee will award the medal to the most meritorious exhibition, whether that falls to me or not.

Yours, etc., B. N. BUGBEY.

WINE CULTURE.

Statement of J. R. Nickeson, of Lincoln.

To the Committee on Gold Medals:

Gentlemen: Having been an exhibitor in the fifth department, at the late Fair of the State Agricultural Society, I am also an applicant for the gold medal in that department. My exhibition embraced fifty-three separate and distinct samples of wine, and seven samples of brandy. Having a large vineyard, embracing over two hundred and fifty varieties of grapes, I have for several years back turned my attention to the manufacture of wine. My success in this direction has been such as to warrant the outlay of large sums of money in the way of wine cellar and other conveniences for carrying on the business on a large scale; and I have, within the last two years, put up one of the best wine cellars, if not the very best, in the State. The object of making so many varieties of wines is to test the qualities and value of different varieties of grapes for wine purposes. The object of exhibiting was to obtain the judgment of others upon these same questions, to assist me in my future operations. My exhibition this year was awarded five first premiums viz: For best white still wine, two years old, ten dollars; for best red still wine, two years old, ten dollars; for best red still wine one year old, ten dollars; for best claret wine, ten dollars; for best brandy, one year old, ten dollars; making more first premiums than were received by any other exhibitor of wines and brandies.

Respectfully, J. R. NICKESON.

WINE CULTURE.

STATEMENT OF ORLEANS HILL VINICULTURAL SOCIETY.

To the Gold Medal Committee for eighteen hundred and seventy-one:

GENTLEMEN: In presenting the grounds upon which the gold medal in the fifth department is claimed for the Orleans Hill Vinicultural Association, it will be necessary, to show to what degree of merit their exhibition is entitled, to give a brief history of their experiments in grape culture and wine manufacture, and something of the successful results to which these experiments have led.

The father of the President of this association is a successful wine manufacturer near Johannisberg, in Germany, and the son was born and bred to the business. Coming to California in an early day he soon formed an opinion that the soil and climate of many portions of the State were well adapted to grape growing and wine making, and early resolved to test the correctness of that opinion by experiments of his own conducting. In eighteen hundred and fifty-three he imported a large number of grape slips of different wine varieties, direct from Germany, and at once commenced their propagation and cultivation, near Sutter's Fort, in Sacramento County. In eighteen hundred and sixty he was awarded a diploma by the State Agricultural Society for the best sample of wine from foreign grapes. In the meantime, his experiments giving very satisfactory results, he had been examining the country for a favorable location for a vineyard, determined to put in practice, on a large scale, what he had to his own satisfaction demonstrated in a small way. In eighteen hundred and fifty-eight he selected the ground where the vineyards of the Orleans Hill Vinicultural Association are now located. In eighteen hundred and fifty-nine he removed all his vines to that place, planted them out, and commenced a vineyard in good earnest. In eighteen hundred and sixty the Secretary of the association located a piece of land adjoining that of the President, and also commenced a vineyard. Although not yet associated together for general business purposes, experiments for mutual benefit of both were then systematically commenced, to determine the best varieties of grapes to cultivate for wine purposes. Sixty different varieties were planted, cultivated, fruited, and experimented on, and as fast as one variety was rejected the vines of that variety were grafted with the variety giving the greatest promise. This weeding out process has been continued until, for wine purposes, the association, which was organized in eighteen hundred and sixty-nine, are now cultivating but two varieties—the "Orleans" and the "Reisling."

The object aimed at in all these experiments has been to produce light and heavy table wines of uniform quality, equal or superior to the best European brands, and the first point was to find the grapes best adapted to the soil and climate of California for that purpose. There is no merit in the production of a good wine by accident, merely because the circumstances happen to be favorable, nor will such accidental production build up for California a good and lasting reputation as a wine producing country. The man or association who, by a long series of experiments, learns the variety of grapes best for a superior and perfectly reliable and uniform quality of wine, contributes more to the permanent success of the wine industry in the State—even though he

makes but a hundred gallons a year—than does a hundred or a thousand men who cultivate their hundreds of varieties of grapes and annually make their hundreds of thousands of gallons of wine, one half of which will have finally to be sold for vinegar, and the other range all the way from poor to good, according to its accidental favorable or unfavorable treatment. While experimenting upon the kinds of grapes as above intimated, we have at the same time been as carefully and eagerly carrying on experiments in the manufacture of the wine, until we are now prepared to produce a good article of wine of the variety desired, providing we have good grapes, with the same certainty and uniformity as the miller produces good flour from good wheat.

If all other wine growers and wine makers had been equally careful, the reputation of California wines would have been very different from what they now are, and with one half the annual product the value of that product would have been at least doubled. The Orleans grape being a good thrifty grower and prolific bearer and late to mature, we plant this variety on the sunny exposures of the hills, and the Reisling being the reverse of these in their habits, they are planted on the north slopes of the same hills. The association own now eight hundred and fifty acres of land, situated in the foothills of the Coast Range of mountains, in Yolo County, of a soil of as favorable a chalky formation as that upon which are located the celebrated vineyards of Johannisberg. On a portion of this land they have ninety thousand vines of the two varieties above named, and are annually adding more. In the year eighteen hundred and sixty-nine the association produced twenty thousand gallons of wine, in eighteen hundred and seventy, eighty thousand gallons were made, and the present year they will make an equal quantity. They have never experienced any trouble to find a ready and remunerative market for all the wines produced, nor would they if the product were increased ten or a hundred fold. They have adopted and uniformly practice the plan of closed fermentation, and find it much better for our California climate. As a satisfactory test of their wines, the association have imported pure German wines, made by the father of the President of the association from the same varieties of grapes, and submitted them, with those of their own make, to disinterested good judges. The reports of these judges have uniformly been most favorable to the California product.

These wines have also been exhibited for competition at the Fairs of the Mechanics' Institute and the State Agricultural Society in eighteen hundred and seventy and eighteen hundred and seventy-one, and have received at both places most encouraging commendation, securing a greater number of first premiums compared to the number of kinds exhibited than the wines of any other exhibitor. If the committee award the gold medal in the fifth department to the exhibitor who has really contributed most by skillful experiment and successful results to the advancement of the wine industry of the State, then we think the Orleans Hill Vinicultural Association justly entitled to that award.

Respectfully,

JACOB KNAUTH, President.

Carl Strobel, Secretary.

SILK CULTURE.

STATEMENT OF ED. MULLER, OF NEVADA.

To the Gold Medal Committee:

GENTLEMEN: My exhibition in the fifth department was a representation of the silk business, from the silkworm eggs to the eggs again, showing cocoons hatching and feeding in every stage of growth to full size, and until they were spinning cocoons. Also showing the moths hatching from the cocoon, and laying the eggs again. In fact, I showed all the conditions of a cocoonery in full operation. My exhibition was but a small edition of my own cocoonery, as it has been shown in Nevada during each Summer for years past. The experiments conducted by myself and others for a term of years have demonstrated beyond a doubt that the foothills of the Sierra Nevadas are most admirably adapted to the cultivation of the mulberry tree and the feeding of the silkworm—to silk culture in all its parts. I regard it only as a matter of time to see our hills and mountain sides covered with mulberry plantations, and the silk industry prospering everywhere in that portion of our State in all its glory, employing thousands of people portions of the year in rearing the insect and other portions of the year in reeling the silk and preparing the same for the factory. There is no other industry in our State, in my humble opinion, that can be made so beneficial to our people and the State at the same time as silk culture. But to bring it up to this beneficial position something more than individual exertion is necessary. Our people are unaccustomed to the care and strict attention that the successful prosecution of this industry requires. They are ignorant of the first rudiments of its requirements, and not inclined to engage in new industries.

But the art of managing the business in all its stages is easily learned, and if the industrial societies and the State Legislature will give it the benefit of their fostering care it may in a few years be generally introduced. I would have no extravagant premiums given for the cultivation of trees, but I believe that a small premium offered by the State for each one hundred pounds of cocoons of good quality, or for each twenty-five pounds of reeled silk, would be a most judicious expenditure of some of the State's money. Such legislation would call attention to the industry and show that it had the approval of the State. Silk culture and wine culture flourish in the same counties and require the same conditions of soil and climate, and are both well adapted to the foothills. Wine culture has already obtained a firm footing and is past the necessity of State aid. Not so with silk culture. It needs encouragement, and will well repay that encouragement. I have done what I could during the last ten years to give this industry my countenance and encouragement in the county in which I live, and through my exertions this county—County of Nevada—stands foremost as a silk growing county in the State. In Nevada we do not consider it necessary or even advisable to put out large plantations of trees or build expensive buildings for cocooneries in order to enter upon the business successfully or profitably.

A few trees set out around the place as shade or ornamental trees will at the same time answer for furnishing the leaves for the worms. No better or more beautiful trees than the white mulberry or moretti

can be found for the purposes of shade or ornament. They have a luxuriant dark green foliage, are rapid growers, and can be trimmed or trained to any desired shape or form. They are among the cleanest trees we have, bring no offensive insect to breed in them or feed on their foliage, and shed no unpleasant green or other substances about the place like many other trees used for shade. Not only this, but they produce a great abundance of most excellent fruit, much of it being nearly equal to the blackberry for eating raw or for cooking purposes, and all being a good food for chickens and pigs. Ripening as this fruit does about the season of most varieties of cherries and early figs it will also be useful in keeping the wild cherry birds so well supplied with food in which they delight that the cherries and figs will be safe from their ravages.

But those who plant the mulberry for shade will find its greatest value to consist in its value for silk purposes. The day is not far distant when in this country, as in the countries in the south of Europe, the leaves of the mulberry tree will command in the market a regular and remunerative price. About every town there will be families who will make it a business to feed each year a small number of silkworms from the leaves they may be able to purchase from their more fortunate neighbors.

SIXTH DEPARTMENT.

FRUIT.

Statement of J. R. Nickeson, of Lincoln.

To the Committee on Gold Medals for eighteen hundred and seventy-one:

Gentlemen: As you require a statement of my claims to the gold medal in the department in which I exhibited, permit me to submit the following:

I exhibited in the sixth department as follows:

One hundred and twelve varieties of apples;

One hundred and forty varieties of grapes;

Forty-five varieties of pears;

Seven varieties of peaches;

Eight varieties of figs;

One variety of pomegranates, one of prunes, one of English walnuts, and one of almonds.

For the above exhibition the Committee on Fruit awarded the first premium for the "best general display of fruit, embracing the best and greatest number of varieties," and for which I received the sum of one hundred dollars. I could give the committee a full history of my experiments, successes, and losses since I embarked in the fruit business in this State; but, as I did this in full last year, I do not deem it necessary now. If the committee desire any more detailed statement, I most respectfully refer them to my last year's statement, on file in the Secretary's office.

All of which is most respectfully submitted.

J. R. NICKESON.

SEEDS.

STATEMENT OF D. L. PERKINS, OF EMMATON.

To the Committee on Gold Medals:

GENTLEMEN: The following claim for the gold medal for agricultural products by me is most respectfully submitted for your consideration:

Agriculture is one of the most important employments in the world, and in order to carry out its great importance it is necessary that in all of its workings everything should be of the best, not only in its workings, but also in the materials to be used to carry it on well and be of benefit to those engaged in it. Thence, in going into field culture it is of the greatest importance that everything of the seed kind should be of the best quality. I have now been for the past fourteen years engaged in the growing of seeds, for the purpose of giving to the public the best and purest kinds for their good and benefit in the vegetable department. What greater luxury can we have at our table than good choice vegetables of all kinds? In order to have these, great care and attention is required on the part of the grower to see that nothing but the best is put into the market. In carrying on this branch of agriculture, study is required in order to carry out all of its branches successfully.

Let us go over the past, and see what I have done: To nearly every country I have sent choice collections of California seeds. At the Paris Exposition my collection took the prize of the silver medal, although I had eighty-four competitors. This fact alone shows that my collection was appreciated by those who acted the part of Judges. And now comes Japan to this State. She has sent her young men to learn how we farm, and learn and judge of the difference of the two countries. Already I have shipped to their Government a large case of California grown seeds, as a present, and another installment of grain and seeds will soon follow through a private party. This is but the beginning of a great and important business. This I claim to be of invaluable importance to this State and to the country at large. And it is by the energy of individuals that these things are brought about and good results from them. I claim that it is the starting of an enterprise that gives life and tone to any business, and though small at first, it will gather such an impetus that no one can foresee its magnitude. Japan not only wants our grains and seeds, but already they are buying choice stock to send to their country, thus showing that they fully appreciate what they see when they come to view our Golden State.

Look at my record for the past fourteen years at the different Fairs. The result has been highly satisfactory, showing that what has been exhibited by me has always carried off the premiums, showing that the judges fully understood the difference between the fruits of different competitors. It has been impossible for me to fill orders for seeds for the past two years. It was not owing to my want of knowledge, but to the new plan to which I had selected to carry out the great business of seed growing. Dealers write to me very early in the season for me to fill their orders, so that if I should fail they can send East for them. The time was when they would not buy of me, but that prejudice has worn off, and they find that the seeds grown in California, by a competant and trustworthy grower, are better than the foreign seeds. Proba-

bly there is no State in the Union so well adapted in its soils and climate as California for the raising of seeds; they seem to hold their vitality longer than anywhere else. I have sent a great many seeds to different States, to parties sending for them, and in all cases they have always given the best of satisfaction, producing larger and finer vegetables than their own of the same variety. Thus we see how a business of this kind is acknowledged abroad; it is of great value to many of all ranks in life that are benefited through this channel of business.

It seems unnecessary for me to enlarge upon this subject. Unaided and alone, I have done all that a private individual could do to show to the world at large what California can do. My object in thus sending abroad our productions was to further the cause of immigration and agriculture, and to promote our future prosperity.

In view of what I have thus done, upon your kind judgment I rest my claim.

All of which is most respectfully submitted to your consideration.

DANIEL L. PERKINS.

SEVENTH DEPARTMENT.

WORKS IN MARBLE.

Statement of J. C. Devine & Brother, of Sacramento.

To the Committee on award of Gold Medals of the State Agricultural Society:

Gentlemen: In our department, on the merits of executing the finest and best pieces of sculpture in marble which were exhibited at the State Fair of the present year, held in this city, and as regards the same we submit:

First—That the exhibition of the same was attended by considerable cost and labor to us, our object being to have the fine arts of our State, as produced by hammer and chisel, fairly represented, and thus call for all honorable competition.

Second—We claim the gold medal for our beautiful display of marble work in mantelpieces, scrolls, and monuments—representing the best workmanship in that line of art ever exhibited at a State Fair in California—and as soon as our competitors learned that we had such pieces for exhibition, they concluded not to compete, so we were the only marble workers who made a display at the State Fair of eighteen hundred and seventy-one.

Third—In our department at the last State Fair, the two mantels were of native Vermont white marble, as fine in "texture" and as susceptible of as bright a polish or luster as any marble imported.

Fourth—We have also to say for information, that there has been discovered in our neighboring State, Nevada, an immense ledge of marble, specimens of which having been worked and polished by us, prove as

fine and as susceptible of as brilliant an exterior as the famous Italian statuary. The lode is situated at Pyramia Lake, and the discoverer is Mr. Reapheal, of Wadsworth.

Fifth—We would impress upon your minds, gentlemen, that in getting up one of the fine mantelpieces referred to, we went to very great expense, our aim being to exhibit something alike creditable to our glorious State and the Pacific coast. It is too costly an ornament to find a ready customer, as its price, fifteen hundred dollars, would be but a fair remuneration for our skill and labor.

All of which, gentlemen, we submit to your judgment and discretion.

J. C. DEVINE & BROTHER.

PAINTINGS.

STATEMENT OF D. H. WOODS, OF SACRAMENTO.

To the Gold Medal Committee:

GENTLEMEN: In answer to your request that I shall file a written statement of my claim to the gold medal for works of art, there is but little I can say with propriety. I hope the committee will not place a collection of copies from chromos and engravings on a par with original paintings. If they do, we may expect future exhibitions to be made up of copies only, it being much easier to remain in the studio and copy the productions of eminent artists, than to travel and make studies from nature.

Yours respectfully, D. H. WOODS.

SACRAMENTO, September 21st, 1871.

MR. I. N. HOAG:

DEAR SIR: In answer to your inquiry as to which of my pictures are original and which copies, I answer: That I have one cabinet portrait of the father of Mr. D. H. Haskell, of this city, which I copied from an ambrotype, the subject having died some years before. My portraits I make as follows: I make a photograph, from which I make the drawing, and then I do all the painting from life. The horses, Lodi and Cheatham, were drawn and painted from life. My cow was also drawn and painted from life. My landscapes I sketched from nature at the places they represent. My fruit I selected at the orchard of Mr. C. C. Reed, of Washington, Yolo County, and made my drawing and painting directly from the fruit. The sheep I have painted were first photographed by J. G. Brayton, Esquire, of Napa City. I will state that it has become the universal custom of portrait painters to first secure a photograph of their sitters. I know of no exceptions to this rule on this coast.

Very respectfully yours, D. H. WOODS.

P. S. In each case where I have not used the word "photograph," the picture was drawn and painted from nature. I enter one painted photograph. I made the photograph myself. D. H. W.

PAINTINGS.

Statement of Mrs. W. E. Brown, of Sacramento.

To the Committee on Gold Medals:

I desire to enter the pictures which I had on exhibition at the last annual Fair, for competition for the gold medal of the society. I claim the medal, first, on account of the number and variety of the pictures exhibited by me, embracing landscapes from original sketches; heads, in oil and water colors; foliage, in oil on porcelain; and fruit, in pastels; second, on the ground of their superior excellence.

Very respectfully, MRS. WM. E. BROWN,
Corner Third and O streets.

PAINTINGS.

Statement of Oscar Kattschmidt, of San Francisco.

To the Committee on Gold Medals:

Gentlemen: It does not seem to me to be exactly in accordance with good taste for an artist to set forth the merits of his own art performances, especially in a contest for merit with the works of his brother artists. It would be much more agreeable to me to leave this matter of comparative merit entirely to the good taste and judgment of those who are especially designated to decide it, without comment. But as you require statements from all contestants for the gold medal, I suppose I will have to lay aside my own feelings in the matter and comply with the requirement.

First, then, I would remark that as the contest in the fine arts department lies principally between two classes of work, viz: ordinary work in marble, and paintings, I presume the committee will have no hesitation in determining which of these classes is entitled to be placed first in the scale of excellence or degree of merit. Had the artist in marble presented finely executed specimens, requiring the highest order of art in his class, such as historical or allegorical representations or statuary, and the painters had presented only such samples of their art as require the lowest order of skill, such as copies of other paintings, or specimens of portraits, then a different question would have been presented to the committee from the one raised by the facts of this exhibition. This question having been decided, as I am satisfied it will be, in favor of the paintings, the second question arises as to which artist in this class exhibited works requiring the highest order of art to represent or design and paint. This question can be easily determined by reference to the entry books of the Fair, or it was undoubtedly remarked by those members of the committee who examined the exhibitions of the different artists in the gallery.

The exhibition made by myself embraced all the following subjects: historical, allegorical, landscape, portraiture, and fruit, while, if I am not mistaken, the exhibition of none of the other artists embraced more

than the three latter, placing animal painting with portraiture, where it properly belongs.

Providing, then, that the execution of my pieces was only equal to that of my competitors, my exhibition, embracing a broader field and subjects of a higher order, must certainly be entitled to the greatest degree of merit; and I may be permitted, with propriety, here to state that the regular Committee on Fine Arts seem to have come to this conclusion, as they awarded me the premium of fifty dollars offered by the society for the best exhibition of paintings. It is also proper here to refer to the fact that in addition to oil paintings in all the above classes my exhibition embraced drawings in India ink and pictures in water colors, thus showing work in three distinct branches of art, while none of the other artists showed in more than one of these.

Now, as to execution, I will not speak either of the execution of my work or that of the others, as I do not feel at liberty to do so; but I will in general terms point out some of the characteristics of well executed works of art, and to some extent contrast them with the characteristics of poorly executed works, leaving the committee to determine the relative classification of the several exhibitions. In all historical, general, and allegorical paintings no artist can succeed unless in the first place he has a distinct and vivid conception of his subject and the light in which he wishes to represent it. He must then convey or transfer to the canvas his own conceptions, so that they may be seen and recognized by the average public with the same distinctness and vividness as he conceived them. The artist must not only understand and appreciate, or as it were *feel*, the character of his subject, but he must portray that character with living, acting, and almost speaking characteristics, and in doing so he should be able to bring to his aid all the effect of brilliant, fresh, and soft coloring, in accordance with the rules and laws of art, so as to produce a perfect ensemble. No person can become proficient in this class of paintings unless he possesses not only the historical knowledge necessary to illustrate his subject, but he must possess in addition the real feeling or inspiration of an artist, and be able, in a manner, to act over again the history of the times he attempts to portray. These requisites place the historical and allegorical above all other classes of paintings, and such works are entitled to higher merit than any other.

Then in regard to portrait paintings; the artist should not only throw into the picture the individual expression of his subject, but as much as possible a trace of his character as well. The execution should show a freeness and ease of expression, the portrait setting out from the background with a natural and lifelike appearance. The flesh tints should be preserved with a delicacy and clearness in all stages, from the deepest shadow to the highest lights, always preserving a true relation to the general tone of the ensemble. A portrait should be a thing of life if not of action.

As to landscape paintings, their great merit is to be found in their truth to nature, correctness of design, and naturalness in execution. Originality should be the key to merit, as it is comparatively easy to make a copy, but it requires skill to sketch and execute an original.

Having thus thrown out a few hints, I will allow the committee to determine how well my performances conform to the rules I recognize as binding.

All of which is respectfully submitted.

OSCAR KATTSCHMIDT.

REPORT OF GOLD MEDAL COMMITTEE FOR 1871.

To the President and Board of Directors of the State Agricultural Society, Sacramento, California:

Gentlemen: The undersigned, in the discharge of the duties assigned them of awarding the gold medals in the different departments of the State Fair, made, during its progress, a careful examination of all the articles and products exhibited. With a view to a more complete understanding of the case of each claimant, they invited a full written statement of the grounds upon which such claim was based, thereby gaining much information with regard to the practical value to the State of several important industries. The committee met, pursuant to adjournment, at the society's rooms in Sacramento, and after careful and deliberate reading of the papers there submitted, made the following awards:

Second Department—To E. Soule, of Sacramento, for home manufactured farm wagon, and wagon materials made from California grown locust timber.

Third Department—To Joseph Neumann, of San José, for home made silk goods from California raised cocoons.

Fourth Department—To Winter, Maurer & Co., of the Mission Candle Works, San Francisco, for home made candles.

Fifth Department—To E. Muller, of Nevada City, for exhibition of the silk business.

Sixth Department—To J. R. Nickeson, of Lincoln, Placer County, for exhibition of fruit.

Seventh Department—To J. C. Devine & Bro., of Sacramento, for sculpture and other work in marble.

The medal for the first department was not referred to this committee to award. In addition to the above, the committee recommended a gold medal for the Pacific Wood Preserving Company, of San Francisco.

In making their awards the committee have been governed by the following considerations:

First—The merit of the exhibits;

Second—The value to the State of the interest thus represented;

Third—The need of its encouragement.

Had the merits of the exhibit been alone considered, the awards would in some cases have been difficult.

SECOND DEPARTMENT.

In the second department there were ten contestants, viz:

E. Soule, of Sacramento, for home manufactured farm wagons, and wagon materials made from locust timber;

H. M. Bernard, Sacramento, for large and meritorious exhibit of carriages, wagons, carriage materials, etc., for which he has hitherto

received the gold medal of 1869, twenty first premiums—in all, sixty-three premiums, at different Fairs in the State;

William P. Ready, Sacramento, for two gangplows of different styles of manufacture—the Challenge Gangplow, invented by him and patented in 1861; a trotting buggy of his own invention; two farm wagons, and one self-sharpening cultivator;

A. L. Fish, agent, for Knowles' patent steam pump;

Michael Lumsden, for boot screwing machine;

George A. Lloyd, for a gopher trap;

C. B. Brown, self-generating gas burner;

Pneumatic Gas Company, for gas machine;

John F. Uhlhorn, for extension sidestick;

Pollard & Carvill, San Francisco, for Clarence coaches, wagons, and carriages.

THIRD DEPARTMENT.

In this class there were three contestants, viz:

Joseph Neumann, of San José, for home made silk goods, manufactured from California raised cocoons;

Tobin, Davisson & Co., of San Francisco, for exhibit of Cheney & Co's American silks;

J. E. Parker, for one set of double carriage harness, one set single carriage harness, one set double team harness, five gentlemen's saddles, and one lady's saddle; also, riding bridles, made of California tanned leather; which articles have been awarded premiums.

FOURTH DEPARTMENT.

In this there were seven contestants, viz:

L. K. Hammer, for Chickering & Sons Pianofortes; one grand piano; one parlor square piano; one square grand piano.

Nicholas Lumsden, for Great Arctic Salve.

Jacob Strahle & Co., San Francisco, for large and meritorious exhibit of new Grecian curved billiard table, with cue rack, pool board, and marker, all of California laurel and birdseye redwood; one set of chamber furniture; one center table, and set of workboxes of California woods.

John F. Cooper, for exhibit of a variety of musical instruments, seven in number, which have been awarded special premiums.

N. Clark & Co., San Francisco, for pottery and drain tile.

Nichols, Falvey & Co., for woodenware; pails, tubs, etc.

John Breuner, for furniture; one rosewood inlaid chamber set.

Winter, Maurer & Co., of the Mission Candle Works, San Francisco, for home made candles.

FIFTH DEPARTMENT.

B. N. Bugbey, for exhibit of wines and brandies of his own manufacture, from grapes grown by him on his own land, and which have received three gold medals, twenty-three first premiums, two special premiums, and a special diploma, at our State Fairs, since September, eighteen hundred and sixty-three.

D. L. Perkins, of Emmaton, Sherman Island, for California grown seeds, which have been awarded many premiums, both in this country and in Europe.

Orleans Hill Vinicultural Association, by their President and Secretary, for wines grown and manufactured by them.

J. R. Nickeson, Lincoln, Placer County, for fifty distinct samples of wine, and five of brandy, to which five first premiums were awarded.

Edward Muller, Nevada City, for the most meritorious exhibition of processes of silk cultivation and manufacture.

SIXTH DEPARTMENT.

In this department there were only two competitors, viz:

E. W. Garrett, for best exhibit of seedling fruits.

J. R. Nickeson, of Lincoln, Placer County, for largest collection and greatest variety of named fruits raised by him, viz: one hundred and twelve varieties apples; one hundred and forty varieties grapes; forty-five varieties pears; seven varieties peaches; eight varieties figs; one each of prunes, English walnuts, apples, and pomegranates.

To this exhibition the first premium was awarded.

SEVENTH DEPARTMENT.

In the seventh department there were four competitors, viz:

D. H. Woods, of Sacramento, for oil paintings from nature.

Mrs. W. E. Brown, of Sacramento, for exhibition of landscapes, heads, foliage, fruits, etc., executed by herself.

Oscar Kattschmidt, for oil paintings, India ink drawings, and water color pictures.

J. C. Devine, of Sacramento, for sculpture and other work in marble.

The committee also recommended a gold medal to the Wood Preserving Company, of San Francisco, believing that to increase the durability of timber is equivalent to an increase of supply, and is consequently a question of public economy. The *production* and *preservation* of timber is, in the opinion of the committee, a matter of vital importance to the State.

The committee experienced much embarrassment from the imperfect classification of the different exhibits. Thus in the same category were the exhibits of wines, brandies, and silk culture. The former purely manufactured articles, and the latter agricultural products, the committee being placed in the position to decide between the relative merits of agricultural and manufacturing skill, where in point of fact no relation exists. In such cases, where the exhibits were equally meritorious of their kind, the committee gave the award to the industry which in their opinion most needed encouragement. The committee would, therefore, most earnestly recommend that each of the great and leading industries of production and manufacture be so classified in future that only those of each kind shall come in competition.

As the objects of agriculture (including the minor culture of fruits, etc.), are to increase the quantity and improve the quality of plants and animals useful to man at the *least cost* and in the shortest time *without permanent deterioration of the soil*, your committee would further recommend that all exhibitors competing for premiums be required not only to give a detailed written statement of the *mode* of production but the *cost* of the same. In this way there would be collected at each Annual Fair a large amount of practical information of incalculable benefit to the agricultural and manufacturing interest of the State. Ever so merit-

orious an exhibit will contribute nothing to our industries if the cost of production, *including permanent deterioration*, is such as to make the thing produced unremunerative.

All of which is respectfullly submitted,

EZRA S. CARR,
A. T. DEWEY,
NEWTON BOOTH,
B. B. REDDING,
W. WADSWORTH,
E. G. WAITE,
Committee.

SPECIAL GOLD MEDAL.

At a meeting of the State Board of Agriculture a special gold medal was awarded to A. D. Maillard, for his superior horse "Monday."

AGRICULTURAL COLLEGES IN THE UNITED STATES.

Hon. I. N. Hoag, *Corresponding Secretary, etc.:*

Your request that I would furnish a statement of the working condition of the various agricultural colleges of the country at the present time, and the prospects of the agricultural department of the University of California, for your forthcoming volume, I cheerfully comply with. I have received the annual catalogues of nearly all of them, and the recent visit of General Horace Capron, late head of the Agricultural Bureau at Washington, who made a tour of inspection among them before leaving the country to introduce the best features of our agricultural progress among the Japanese, enables me to give you a summary of his personal examinations.

I will name them in what he considers the order of their excellence, taking the time since the organization and means employed fully into account.

Massachusetts Agricultural College, at Amherst, endowed by two thirds of the Congressional grant (the other third going to the Institute of Technology at Boston), one hundred and sixty-eight thousand dollars; gift of county, seventy-five thousand dollars; State of Massachusetts, one hundred and twenty thousand dollars; to which was added by the Legislature of last Winter one hundred and fifty thousand dollars, and from private individuals enough to make a productive fund of five hundred thousand dollars. Chartered April, eighteen hundred and sixty-three; opened to students in eighteen hundred and sixty-seven. January first, eighteen hundred and seventy-one, had one hundred and forty-seven students, of whom thirty were in the fourth or senior class. Two weeks ago the original twenty-seven who first entered received the honors of the institution. Its real estate is valued at one hundred and ninety six thousand and five hundred dollars. Its live stock, vehicles, and implements, fifteen thousand dollars. Of this stock the herd book shows fourteen short horns, five Ayrshires, four Devons, and four Jerseys, twenty-seven grade cattle, twenty-seven Southdown sheep, nineteen swine of the Suffolk and Chester White breeds, and six horses.

Eighteen dollars a term is charged for tuition. The necessary annual expenses of students are from two hundred and fifty dollars to three hundred dollars. All the County and District Agricultural Societies of the State own scholarships in the institution, and send students approved by their own examiners, whose expenses are paid. A labor corps is established for the benefit of such students as desire to work their way through the college, and so important do the trustees find this feature that they recommend raising a fund for employing industrious students at a fair rate, without too strict regard to the remunerative value of their labor, that habits of industry and a spirit of

independence be fostered and encouraged, and because such students are most likely to become valuable members of the agricultural community. All students are required to labor two hours on alternate days with the skillful and intelligent superintendent of the farm. For all additional work they are paid twelve and a half cents per hour. It not unfrequently happens that the best student earns the most money.

What do they study at Amherst? The very first study of the first year is human anatomy and physiology, with chemical physics, commercial arithmetic, and bookkeeping.

They have lectures on agriculture, considered first as an art and in its relations to other pursuits, and are taught what education a man must have who would succeed in it. Then they begin to examine the subject of soils, their origin, nature, and varieties. Lectures through the term on the laws of health, and daily military drill, "the school of the soldier." The second term they begin chemistry, learn how soils are improved by chemical and mechanical means; the philosophy of drainage, irrigation and tillage; the chemistry of the improvement of metals, and their use in the arts. With this, instruction in elocution; vocal music and composition; also, military exercises in the "school of the company." With the third term closer habits of study and observation are formed. We have more lectures on agriculture, on sterility of soils, causes and remedies, rotation of crops. Now comes organic chemistry and laboratory instruction, the close practical imitation of Nature's great processes; daily recitations in algebra, geometry, and French, in elocution and reading. Infantry tactics are continued in the "schools of the company and battalion."

Three years more of orderly progression from this starting point of symmetrical, rational development of every faculty of body and mind, science and art moving hand in hand, every step made practical, ought to make a Massachusetts farmer every inch a man.

No sensible person can read the full curriculum of studies pursued, especially history, political economy, commercial and rural law, etc., and not be convinced of the immense advantages of the "new education" over the old as a preparation for citizenship.

The corps of instructors consist of eight full professors, with two assistants, a gardener, and farm superintendent. There are fourteen lecturers, men distinguished in special departments of science, as Professor Hitchcock, on Comparative Anatomy; George B. Emerson, on Arboriculture; James Law, on Diseases of Animals, etc., who regularly fill their appointed places in the course of study.

The Massachusetts Agricultural College owes much of its prosperity to a wise provision of its charter which gave a trustee to each county, and made the appointment one for life unless removed for cause. The representative of old Suffolk is Marshall P. Wilder; of Berkshire, Henry Colt; of Bristol, Nathan Denfee, who has at his own cost erected a magnificent conservatory upon the college grounds. Each county has given its best man and one distinguished for zeal and knowledge in these pursuits, and thus some of the evils which State institutions labor under are practically avoided. To show that a farm, vegetable garden, orchards, etc., are not serious drawbacks to the financial prosperity of agricultural colleges, even in their early beginnings, I append this item of the Amherst records for eighteen hundred and seventy-one:

Total credits of farm, including property inventoried January first, eighteen hundred and seventy-one, credit for labor performed in grazing,

and receipts for produce and live stock, nineteen thousand eight hundred and seventy-three dollars and nineteen cents.

Total debts of farm, including property inventoried January first, eighteen hundred and seventy, and all expenditures for live stock, labor, implements, repairs, and fertilizers, twenty-one thousand four hundred and nine dollars and sixty-nine cents.

Three hundred and eighty-three acres of the Amherst domain have been judiciously divided into farming ground, wood land, orchards, vineyards, reserve, vegetable and nursery gardens, botanic garden, ornamental grounds, and arborium. A generous citizen has donated ten thousand dollars for the care of the botanic garden. The model barn, capable of holding fifty head of cattle and horses, cost ten thousand dollars. The most expensive of the college buildings cost thirty thousand dollars; farm house, four thousand dollars.

So much for an institution which, throughout its course of study and by every appliance of instruction, emphasizes the truth that one of the most dignified and important of human employments is to feed and clothe the world, and strives to make the workman worthy of his work.

CORNELL UNIVERSITY,

Nobly endowed and wisely planned to meet the educational wants of all our leading industries, is likely ere long to rival Amherst in calling the most distinguished agriculturists into her service, and by perfecting a model farm, under the direction of Henry McCandler, late of the Royal Agricultural College of Scotland. The agricultural and mechanical operations at Cornell have been carried on mainly by students. They have done a large amount of under-draining and other substantial work during the present year, at the rate of ten cents per hour. As a class, the President reports the working students in the voluntary labor corps among the very best in the University.

Among the many prizes to undergraduates it is noticeable that the founder's prizes are, first, to the student of the Voluntary Labor Corps on Agriculture who, without neglecting other University duties, shall show himself most efficient, practically and scientifically, upon the University farm, fifty dollars; second in merit, twenty dollars; third, ten dollars; second, the same amounts to meritorious students who excel in the University workshops.

The President's prizes fully recognize agriculture, one of fifty dollars being offered for the best thesis or original investigation, fifty dollars for meritorious student in botany and horticulture, with several others of smaller value. The noble spirit of beneficence in which this industrial University was begotten is self-perpetuating; gifts to meet its varied and growing wants are pouring in; it needs only to be free and open to both sexes to be worthy of its position in the Empire State. Opened in eighteen hundred and sixty-eight; it numbers eight hundred students.

IOWA AGRICULTURAL COLLEGE,

Located at Ames, Storey County, was opened in eighteen hundred and sixty-nine to both sexes, with a well developed labor system for house and farm. All members are "laborers" during the afternoon, at prices ranging from five to ten cents per hour; has an excellent farm of six hundred and forty acres; tuition free. General Capron reports this as

one of the very best institutions founded on the Congressional grant, and far in advance of some who got a greater share of the lands.

KENTUCKY

Leads all the Southern and Southwestern States in industrial education. The Agricultural Department of her State University has a farm of four hundred and thirty-three acres, consisting of Ashland, the home of Henry Clay, and the adjoining estate of Woodlands. Every student is required to work two hours a day in the horticultural department without compensation. Those who wish to defray a part of their expenses by their labor can work four hours a day on the farm, or five hours in the shops, receiving from five to ten cents per hour. One hundred young men were enrolled on this labor corps in eighteen hundred and sixty-nine, many of them defraying all of their expenses. Of seven hundred and fifty-seven students in the University, three hundred and eighty-three were in the agricultural and mechanical departments.

ILLINOIS

Has a farm of a thousand acres to be developed principally as an experimental and stock farm; forty acres are set apart for gardens and nurseries. Labor classes have been organized. Sixty-two out of one hundred and ninety-six students have been enrolled in these. Young women have been admitted. One of the best movements of the University has been the establishment of Farmers' Institutes in different portions of the State, where practical questions are discussed and lectures given by the Agricultural Professors. The stock books already contain many valuable donations and specimens, and some of the best farmers and stock growers are on its managing Board.

MAINE

Is developing her farm of three hundred and seventy-three acres in the direction of horticulture, especially fruit growing. From one half to one fourth the expenses of the students have been defrayed by their employment in this work.

MINNESOTA

Is putting her best strength into her Industrial College. The President says: "It is no longer a small number of persons preparing for professional work who are demanding higher education, but a vast body of people, hitherto unknown to educators, thronging forward and clamoring to be taught how to do their work in the right way."

KANSAS

Has a well organized labor system, employing both sexes; carries on experimental and miniature farming, allotting portions of land to students. There are ninety-six young men, seventy-six young women, and thirty-seven classical students. Two of the Professors are ladies.

MICHIGAN

Had her Agricultural College established with a very effective manual

labor system, before the passage of the Congressional Act. The additional funds thence derived have been employed in buildings and other valuable improvements. It has averaged ninety students per annum since its opening. There are ten young ladies among its students this year. The President says: "Our students work willingly and well, and thus preserve both the habit of labor and the taste for it."

MARYLAND

Is doing nobly with her share of the grant; has this year one hundred and eighteen students; the expenses of sixty of these (tuition and room rent) is paid by the State.

MISSOURI,

Who has thus far not realized a dollar from the grant of Congress, started her Agricultural College in connection with the State University, bought a farm, organized a labor corps under the direction of the Agricultural Professor, hired a farm superintendent and horticulturist, and now asks the Legislature for one hundred thousand dollars with which to bring it up to the standard of her neighbors. "The agricultural farm must be made a model, representing the State of Missouri; it must be stocked and furnished, and sustained for a brief period, after which it will be self-supporting," say the Curators. The land is divided into fields, each designated by a particular name; careful experiments are made upon these, the results of which are published. Labor of students, paid for at the rate of ten to fifteen cents per hour. Grape growing and stock raising will be specialties, to which particular attention is given.

NEBRASKA

Has her agricultural building and faculty, but her farm is not yet developed. The Kansas plan will be fully carried out as her means become available.

WISCONSIN

Is rapidly developing her farm. Students are paid twelve cents per hour. Several acres are used as experimental grounds by the State Horticultural Society. An excellent report of farm operations is published annually. The Agricultural College is one of the departments of the State University. A noble edifice, costing fifty thousand dollars, has just been given by the State for the special accommodation of the young lady students.

NEW HAMPSHIRE

Has an excellent domain long known as the Conant Farm. Its former owner had cleared one hundred thousand dollars from it without deteriorating its value. The Agricultural College is a department of Dartmouth.

VERMONT

Created an Agricultural College in her State University at Burlington. The farm purchased last year has not yet been adapted to purposes of instruction.

NEW JERSEY

Has, through the work of her Agricultural College and the indefatigable Professor Cook, added greatly to our practical knowledge, especially in the direction of vegetable and fruit growing. Four of the agricultural students are from Japan.

CONNECTICUT

Made over her share of the grant to the Scientific Department of Yale College, adding the funds to those of the Sheffield Scientific School. This school substantially covers the ground of the Massachusetts Institute of Technology; they are the Mechanic Arts Colleges of their respective States. The Sheffield School has graduated twenty-seven; has at present twenty-five seniors, thirty-seven juniors, thirty-nine freshmen, twelve special students—one hundred and forty.

Without specifying further, it is enough to say that in almost every institution founded upon or receiving the benefits of the Congressional grant, the labor of the students is being used to develop the industrial departments. Michigan early adopted this system, and no student is excused from his daily three hours labor except for physical disability.

GENERAL REMARKS.

Briefly then, the Agricultural Colleges, without a notable exception, are meeting the reasonable expectations of the public. They flourish just in proportion to the prominence given them as integral parts of the system of public education. Where the Agricultural College is made a mere adjunct or appendage to a literary institution, students are few, undecided as to their pursuits, and led by sympathy away from the specific objects of agricultural training.

The Commissioner of Agriculture in his recent report says: "These institutions are destined to become a vital power in the land, and to wield an influence which colleges freighted with a curriculum of classical studies can never exert. Mistakes and misconceptions of the sphere of their highest utility will occur, but ultimately, when the grand idea of practical education shall be fully crystalized and their faculties be composed of young and vigorous men developed within these institutions and under the influence of higher progression in physical and practical science, their utility and beneficent influences will fully appear."

The admirable report of the Commissioner of Education is not less emphatic upon this subject: "Great and commendable as was this gift of Congress, had a wider knowledge of technical education prevailed, hundreds of thousands of dollars would have been saved to this great trust, and unspeakably greater results secured."

This resume of agricultural institutions for the year eighteen hundred and seventy-one would be incomplete without a mention of the Horticultural School for Women at Newton Center, Massachusetts. The culture of flowers, small fruits, and vegetables is practically taught, the students laboring the entire Summer from three to five hours daily, with a very marked gain both to physical health and intellectual vigor. Boston affords a market for the products of the garden and greenhouse, the receipts from which are already so large that the institution is expected ere long to become entirely self-supporting.

CALIFORNIA.

The Agricultural College of our University is in (prospective) occupation of a farm so admirably located and adapted by diversity of soil and exposure to various cultures, that by an organization of students' labor it may be improved with a moderate outlay of funds. Its course of theoretical instruction is well arranged, but theoretical instruction alone is not going to make farmers of our young men. It is for the State to decide whether she will lag behind all others in this respect. Whether the University lands shall remain for a long term of years an undeveloped site, suggestive of splendid possibilities, remains to be seen. The education of our youth in the interest of agriculture and the mechanic arts, the object of the Congressional grant, is to me the most vital of "labor questions." This ought to be secured with the least possible sacrifice of productive industry—a principle which Cornell University and several others apply in farm and workshop, with manifest economy of their funds.

While Minnesota is planting orchards, and Massachusetts growing complete sets of California trees and shrubs in their Agricultural College grounds, it is not surprising that the question is so often asked what our agricultural department is doing in a practical way. Local and private enterprises are being started for industrial education at other points, which may take the place of German real schools; but the University should lead, and not follow in everything which tends to develop, diversify, and enoble the industries of the State.

It is proposed that at the next session of Congress a committee be appointed to examine minutely the plan of organization, construction of buildings, management of grounds, and general working of all the institutions organized under the grant, with instructions to report to the next following Congress, for the information of the country and the benefit of similar institutions yet to be organized.

I trust such committee will not find the site of our Agricultural College unoccupied. An Agricultural College without a farm suitably arranged for illustration and experiment would be like a chemical school without a laboratory, or a mechanical school without tools and machinery.

Yours, very truly, EZRA S. CARR.

University of California, Oakland, October 2d, 1871.

TRAINING AND PRUNING GRAPE VINES.

BY I. N. HOAG.

There are many farmers who would plant vines and enter upon the business of grape culture to a greater or less extent but from the fact that they have obtained the idea that there is something very difficult and hard to learn or comprehend in the management of the vineyard. To such we would say, the best way to learn is to plant a few vines and become interested. Then what now seems so difficult will by degrees become simpler and easier.

It is true there are many different opinions as to the best mode of training and pruning vines with a view to obtain the best results. There are also many different practices based upon these opinions. From these differences of opinion and practice among professional viniculturists has doubtless arisen the prevailing idea above referred to as existing among our farmers.

With the grapevine, as with all other vines, trees, and plants, various modes of treatment are required, depending on the soil and climate, as also to some extent on the variety of grape and the purposes for which it is to be produced. The principles and reasons involved in the adaptation of crops, trees, and vines to soils and climates, and in the different modes of treatment by different circumstances, constitute the practical science of agriculture in its most general sense. To study and become familiar with science is the interest and duty of every person who proposes to follow agricultural pursuits as a means of livelihood. The performance of those things which this science requires to be done at the proper time and in a skillful manner, so as to produce desired results, constitutes the *art* of agriculture in the same general sense.

It is equally the interest and duty of every farmer to strive to become proficient in the *art* as well as learned in the *science* of agriculture. To accomplish these requires reading, thought, and practice combined. By reading we learn the result of the experiences of others. By thought and practice we apply the information thus obtained with intelligence for the accomplishment of our own desired objects. In the training and pruning and care of the vineyard science and art as above defined may be and require to be constantly brought into practice; then the whole thing becomes so simple that the operator wonders that he did not comprehend it before.

LOW TRAINING.

General experience in this State, where the atmosphere at night is so dry and pure as to induce a low degree of temperature in the Summer season as compared to that of the days, has proven that low training and pruning is the best. The grapes being close to the ground feel the influence of the heat absorbed during the day by the earth and given out during

the succeeding night, while those higher up are exposed to the greater extremes of the atmosphere. Hence, grapes near the ground or on low trained vines are found to ripen in the same vineyard in this State from ten days to two weeks earlier than the same varieties trained over trellises. It is also found that the former are fairer, larger, and more highly flavored than the latter.

Some claim that the mildew is not so apt to affect the grape grown on high trained vines, where the atmosphere circulates freely, as on those close to the ground. We think reason and experience are both in favor of the opposite opinion. Mildew on a growing plant is not induced by the same causes as mildew on dead and decaying matter. The extremes of heat and cold during the natural flow of the sap is believed to be one of the chief causes of mildew in the grapevine. As these extremes are greater at a distance above the ground, so the inducing causes of mildew are proportionately greater, and we find experience agrees with reason on the subject.

We think that the *time* of pruning has more to do with mildew on the grape than the manner, as we shall show hereafter. In accordance with the general experience of the best cultivators, we would recommend that vines be so trained and pruned as to form the head from one to two feet above the ground. The use of stakes may thus be entirely dispensed with, and quite an expense saved.

TIME OF PRUNING.

When the object is to induce a rapid growth of wood, as in young vines before they are of proper age to fruit, the pruning should be done in the Fall or fore part of Winter. If, however, it is desired to produce less wood and more fruit, the time of pruning should be delayed until later in the season. The time should also be governed by the soil to some extent. On elevated land and a dry soil, where the vine naturally forms but little wood and is inclined to bear too much fruit, pruning should be done early in the Fall after the leaves have fallen. Then when the sap starts in the Spring it will swell the buds with force, and send out strong canes and less fruit spurs.

On the contrary, vines growing on rich, alluvial soil, where too much wood and too little fruit is the natural rule, this tendency may be checked to a great extent by delaying the annual pruning until late in the Spring—even so late that the leaves on the canes are forming. By cutting back the canes of the past Summer's growth at this time, leaving but two or three buds near the base, these buds would then swell evenly and develop strong fruit spurs, and, as a general thing, the result would be a good quantity of well developed fruit stems and blossoms.

A FACT IMPORTANT IF GENERAL.

Here we would mention a fact which has come within our observation and experience, which, if generally true, is of some importance. It is this: that the third fruit bud from the base of the past year's cane throws out larger and better developed bunches of grapes than either the first or second. The grapes from these buds seem also better flavored, and generally superior to those on the first and second. In accordance with this hint we have adopted the plan of cutting the cane

at such length as to leave the third bud, generally, and sometimes the fourth, when a good strong one, and then rubbing off the first and second buds, and leaving the third and fourth for fruit.

The number of fruit buds left on any vine must depend on the age and strength of the vine. If the vines are strong and vigorous, at three years, from two to three bunches of grapes may be allowed to mature on each, without injury. The next year the number may be increased, and so on, increasing the quantity of fruit with the age of the vine.

Having completed the annual pruning, the next operation to be performed in the vineyard is the Spring cultivation. It requires some experience and judgment to determine when and how to cultivate the vineyard; for each locality and soil requires a treatment peculiar to itself. And the same vineyard requires a different treatment, depending on the purposes for which the grapes are to be used.

CULTIVATION ON DRY SOIL.

If your vines are on a dry soil, one that is not well calculated to retain the moisture well into the Summer months, then the cultivation should begin early and continue as long as any weed seed will sprout and grow. The cultivation of such should be deep and thorough. The ground should be finely and thoroughly pulverized from the depth of eight inches to a foot or sixteen inches—plowing both ways and close up to the vine. Care should be had that this plowing is done when the ground is in the proper condition, so that it will not break up into lumps and clods. After plowing each time a cultivator or one-horse harrow should follow, so as to keep the ground level and smooth on the surface. Such cultivation will insure a good crop of grapes for wine purposes on the driest soil in our State, even in our driest seasons. Of course we speak of vineyards of some age, say four years or over.

CULTIVATION ON MOIST SOILS.

Vineyards on our low, rich river bottoms require very different treatment; indeed, such cultivation as we have pointed out above given to vineyards along the banks of our rivers, where the soil is deep, damp, and rich, would most certainly render such vineyards nearly if not quite valueless. We have known many vineyards, on such lands and cultivated under such a thorough system of cultivation, to bring nothing but disappointment to their owners for years in succession. The vines grow luxuriantly, and each year put out an abundance of fruit spurs and blossoms, giving promise and hope of a large and valuable crop. But when the berries are about the size of bird shot, and from that up to the size of small peas, mildew makes its appearance on the leaves and grapes, and the more luxuriant the vine the more vigorous the spread and growth of the mildew. From the time the mildew makes its appearance the growth of the grape is checked, and when it should begin swelling the second time, instead of doing so it remains stationary or nearly so. Some of the bunches on the same vine will do much better than others, and some of the berries on the same bunch will grow to twice the size of others. Some make an effort to color, while others remain a dingy green.

Year after year we have seen the same thing occur, the owner each year making renewed effort to give his vines better treatment, *earlier* pruning and more *thorough cultivation*, and each year meeting with the

same unsatisfactory results, until at last, discouraged and disgusted, he digs up his vines and gives them to the flames. We have known quite a number of good vineyards thus destroyed.

PERSONAL EXPERIENCE.

Three years ago the writer came into possession of a vineyard on the Sacramento river bottom, on rich alluvial soil. Remembering what we had seen, we regarded this vineyard of but little importance; indeed, the first thing we did with it was to give about one half of the vines to a neighbor, provided he would dig them up and take them off the ground. He did so, but before he had transplanted them he also became discouraged in grape culture on such soil, and allowed the vines to die without resetting them.

Having a great amount of other farm work to do, the vineyard was not even pruned until the vines were green with young leaves, and the ground was thickly covered with weeds from three to four inches high. At this stage the vines were thoroughly pruned, leaving only from four to six fruit buds to each vine. The vineyard was then about seven years old. The fruit buds left on the vines, being near the base of the canes, had at the time of pruning swollen but little; those further towards the ends having robbed these of the necessary sap. The vines bled profusely for several days, but finally the bleeding ceased, and the buds began rapidly to expand and throw out leaves and fruit stems in the greatest abundance. As two horses and a large plow could not be worked among the vines, the ground was then plowed, as well as it could be, with a small plow and a single horse. It could only be plowed from two to three inches deep, just enough to cut the roots of the weeds and turn them bottom side up, or roots up.

After the rains had all passed for the season, and the weeds had got a good start once more, the vineyard was again plowed, in a similar manner, and then dragged or harrowed with a one-horse harrow, and left for the season. As soon as the fruit was set, all the suckers and young canes that had no fruit on were pulled off. No other Summer pruning was done, and no pinching off the ends of the canes. A quantity of sulphur was purchased to keep away the mildew; but as no mildew made its appearance, the sulphur was laid away for the next year. The next year the vineyard was treated in a similar manner, and with a similar result, and the sulphur is still on hand.

The average product of grapes for each of the two years was over *four tons per acre*, of the best quality of table grapes, of the California variety. The bunches were very large and compact, and the grapes large, fair, and uniform. None of the fruit was sunburnt in the least. The vines also bore and matured quite a quantity of second crop grapes.

In the same neighborhood and on similar soil other vineyards, early pruned and thoroughly and deeply plowed and cultivated, produced nothing but a scattering crop of half grown and half ripe grapes, together with an abundant crop of mildew on both grapes and leaves.

CAUSES OF MILDEW.

From the above experiments and their results, we think may be traced at least some of the causes of mildew on grapes. Where the vines are pruned early a superabundance of sap is forced into those portions of the vines not cut away. This produces a rapid and unnatural growth—

a growth of itself partaking of the nature of a fungus—and furnishing the most natural food for that fungus known as mildew. When to early pruning we add deep plowing and thorough cultivation of a rich and moist soil, we only increase the cause of mildew by forcing the vine to a more rapid mushroom growth. By late pruning we take from the vine a large quantity of sap, with the canes cut off, and also bleed the vine, and thus relieve it of the superabundance of sap which early pruning retains in it to force an unnatural growth and induce disease.

In other words, early pruning destroys the equilibrium between the wood of the vine and its food; while late pruning restores that equilibrium, or retains only the proper amount of food to sustain and keep up a natural growth of the vine which is left after pruning. Again: by allowing the weeds to grow in the early part of the season, we extract from the soil the unnecessary moisture and nutriment which exists naturally in our rich alluvial bottom lands. Thus in a degree we reduce the lands to the condition of the less rich and drier uplands on which the grape in California is never troubled with mildew or rot.

We believe the greatest cause of mildew is the presence of too much moisture *both in the air and in the soil.* In countries where rain is frequent during the growth and ripening of the grape, mildew is much more prevalent than in our State on our richest and most moist soils. In such countries the grape growers have to contend with both a damp atmosphere and soil, while we have but one, and that only in our low bottom lands.

DRAINING LOW LAND VINEYARDS.

Wherever vineyards on low lands are so situated that they can be thoroughly drained, either by open or covered drains or ditches, there is no doubt that much of the trouble of mildew can thus be got rid of. The system of allowing the weeds to grow we would only recommend as a temporary expedient. We believe that draining will accomplish the same result and has many advantages.

The vineyard can thus be kept looking well, while the growing weeds are an eyesore to any good farmer. Again: when the vineyard is once well drained the trouble is removed for years and perhaps for a lifetime.

SUMMER PRUNING.

There is a great diversity of opinion among vine growers in this country as to what amount of Summer pruning is best for the vineyard; also, as to the best time for doing this pruning. Some contend that cutting the vine back destroys the equilibrium between the vine and the roots—that it is contrary to nature and tends to weaken the vine and shorten its life. Others say that judicious pruning is indispensable to the production of good fruit, and that it is impossible to destroy the balance of power between the roots and top, because the growth of the roots is governed by the growth of the branches. It is not strange that there should be a diversity of opinion upon most all subjects connected with the culture of the vine, since our people have learned or had their experience under so many different circumstances.

Some of our vineyardists are from Germany, some from France, some from Italy, Spain, Portugal, some from the Eastern and some from the Western States. All who have had any experience in vine culture before engaging in the business in California have brought with them the notions and systems of culture of the country from which they came.

Those who have taken up the business here—and this class compose the greater number of vine growers of the State—have had their experiences under as many different circumstances as there are different localities and climates in the State. Hence we say it is not strange that there should be a great difference of opinion on most all subjects connected with the business, and this difference of opinion and practice is very striking in reference to Summer pruning.

The vine will produce fruit, to some extent, under most all circumstances and most any mode of treatment, and the same variety of vines undoubtedly require different treatment in different countries, and in different soils in the same countries. Some varieties of grapes require a warm, sunny exposure, like the south and southwest side or slope of a hill, while others require a cool, shaded exposure, and will do better on the opposite slope of the same hill. Vines, that in Europe, where the atmosphere is humid and the temperature pretty even, night and day, require a southern and very drying exposure, might, in California, do better on a northern exposure; and still nothing but a practical test of this supposition would do to rely upon.

Thus it will be seen that the management of a vineyard in California is, or should be, different from the management in most other countries in which any of our vine growers have had experience—just as different as our climates and soils are different from the climates and soils of those countries. Hence no invariable or universal rule can be safely laid down or followed for any part of such management.

One important thing that should always be borne in mind, in the pruning of a vineyard, in this or any other country, is the fact that *grapes always grow on wood grown and matured the previous year, or on wood that is one year old.* Hence there are

TWO LEADING OBJECTS

To be kept constantly in mind in all operations in the vineyard, and especially in all the pruning operations:

First—To secure as large an amount of fruit of good quality each year as the vine, considering its age, its present strength, and future good health, will produce.

Second—To secure the growth in its proper place on the vine of a sufficient amount of good, strong, and well matured wood, with plenty of large, plump, unbroken or dormant fruit buds, to insure a crop of good fruit each succeeding year. Whenever the knife or shears are taken up to be used on a vine these two objects should be remembered, and each cut with the knife or clip with the shears should be with a view to the attainment of these two ends.

Having called special attention to the leading objects of pruning the vine, which are the same in all countries, and adverted to the influences of soil and climate in different countries and in different localities in the same country, we will now speak more explicitly of the immediate subject under consideration.

THE FIRST YEAR.

The object to be obtained the first year after the cutting or year old vine is planted in the permanent vineyard, is to secure a good growth of at least one main cane, which shall form the future body of the vine or grape tree, as it may be called. We call it *tree* for the purpose of giving

a better idea of what we want to secure by the first Summer's growth. It is really a dwarf grape tree which we want to secure—with a body of good, sound, and smooth growth—standing erect, at least to the hight we wish our future vines to grow. This object, it is evident, can be best attained by throwing all the strength and growth of the young vine into this one cane or body.

If more than one bud starts from the cutting, *the upper end of which should always be covered at least an inch with soil*, let them all grow only till you can see which throws out the strongest shoot, and in the best position for the future body. Then pinch all the weaker shoots off, and keep them so pinched off during the first Summer, thus throwing the entire strength of the vine into the remaining shoot. Keep this shoot erect or perpendicular by carefully tying it to a stake set in the ground for that purpose. The string or cord used should be soft and of good size, so that it will not cut or injure the tender cane. Of course the soil should be well cultivated, often, during the first Spring and Summer, so as to prevent the growth of weeds and to secure the best growth of the vine. But care should be had not to continue the growth so late in the Fall as to endanger the tender growth to be cut by the first frost at its extreme end.

THE SECOND YEAR.

If a good stand or body has been secured the first year, the principal object to be attained the second year is to keep that body erect and give it as great a growth as possible. It should therefore be cut back to the desired hight soon after the leaves have fallen, in the Fall—generally in this State in November—but the locality and season must govern as to this. If any lateral branches have grown below the point at which it is desired to form the head of the tree, they should now be carefully and smoothly cut off with a sharp knife, and all dormant buds below that point should also be removed. As to the proper hight to make the head of the tree there is some difference of opinion, but we would recommend that it should not be over eighteen and not less than ten inches above the ground. The principal reason in favor of low pruning is, that in the latter part of the Summer, when the grapes are growing most rapidly and approaching maturity, the thermometer shows that the atmosphere at from six to twelve inches above the ground is from six to eight degrees warmer, both at night and in the daytime, than it is from four to six feet above, and that the grape will grow more rapidly, ripen earlier, and be sweeter and better.

Another reason is that the grape near the ground is not so likely to mildew. The head of the tree should be so formed as to balance, as near as may be; consequently, at least two shoots, on opposite sides, should be allowed to grow the second year, and no Summer pruning should be practiced this year, unless it be a little *pinching in*—if it be necessary to secure that balance of growth.

Form a good, smooth, and perpendicular body and a well balanced and symmetrical top or head, and you have done all that is necessary for the second year. A vineyard thus formed will always be a matter of pride and mental satisfaction to its owner, and the future care and labor in attending it will be much lighter than if the vines were allowed to lean this way and that. Then, too, vines erect and symmetrical can hold up, unassisted by props, a much larger weight of fruit, and they will be able to bear and mature them much better without injury.

PREPARING THE GROUND TO PLANT CUTTINGS.

In the first place the ground is plowed and subsoiled from twelve to fifteen inches deep, and then well cultivated or furrowed down smooth. Stakes of redwood are then set just where the vines are to be planted. Holes, two feet in diameter and twenty-two inches deep, are now dug close by the side of these stakes, and all on the same side of them, while the stakes are left standing. The surface dirt taken from the hole is then returned to the bottom of the hole, and the bottom dirt is deposited on the surface, thus entirely changing the relative position of the soil. This being done, the planting of cuttings commences.

MANNER OF PLANTING THE CUTTINGS.

The cuttings are made just twenty-two inches long or equal to the depth of the holes. The operator has an iron rod about three feet long, with a split or crutch in the lower end. He places the butt or lower end of the cutting within this split and holding the iron in the right hand and the top of the cutting in the left, he places the lower end of the iron and the bottom of the cutting on the ground close by the side of the stake, and presses them at an angle of about forty-five degrees, down into the loose earth with which the hole has been filled, until the hard earth at the bottom of the hole is reached. He then holds the cutting in its place and pulls the iron from the ground, and with it works and presses the soil closely or compactly about the cutting, and the work is completed for that cutting; and so he goes to the next.

THE ADVANTAGES OF THIS MODE

Of setting cuttings are obvious. The bottom of the cutting from which the root must start rests upon the packed or compressed earth, pressed down and packed by the iron and cutting as they are forced through the soil. The top of the cutting is left about an inch below the surface, so as to protect it from the drying sun. The rich surface soil being in the bottom of the hole, forces the growth of the roots and plant, while the soil being loose above absorbs and retains the moisture during the season.

We can recommend this mode of planting cuttings to all who propose to start new vineyards or extend old ones.

FARMERS' GARDENS.

BY I. N. HOAG.

There are many anomalous features and inexcusable defects in the system of agriculture as practiced in California. We shall endeavor to point out some of these defects and suggest the remedies, in hopes that by so doing we may induce a better, more thorough, and economical system of farming, and thus bring more profit to individual farmers, and comfort and convenience to their families, as well as increased prosperity to the commonwealth.

One of the most striking of these features and one that requires attention at the present time, is the almost entire absence of vegetable gardens throughout the great grain districts of the State. In many of these districts one may travel hundreds of miles through flourishing wheat and barley fields, passing the residences of well to do farmers, and not see a solitary vegetable garden worthy of the name.

Californians as a general thing are too apt to exert all their energies in a single direction and trust all their chances of success, all their hopes of a fortune, to the throwing of a single die. Greatly to the disadvantage of our agriculture, this one idea system of farming has absorbed the attention and monopolized the energies of our agricultural communities. Wheat and barley have been and are still too much the exclusive product of the State.

No agricultural country can be assured of an uninterrupted and continuous prosperity unless it produces as nearly as may be all the necessaries of life. As our agricultural industries are now situated, two or three seasons unfavorable to wheat and barley would render by far the larger portion of our farmers poor, if not completely bankrupt. As it is with a State or large community, so it is with smaller ones or with individuals and families. Those who depend for a livelihood upon the products of the soil should endeavor to produce as near as may be all the varieties of food they consume. Especially should no farmer in this State be without a well tilled and well stocked vegetable garden. One half acre well prepared, planted and cultivated in a good variety of garden vegetables, will administer more to the real wants, comfort, health, and happiness of a family and will save more money to its owner than ten acres devoted to wheat, barley, or other ordinary field crops.

Again, the garden is the place for experiments. It should be in miniature an experimental farm. The man who really becomes interested in and cultivates a good garden, will become a better and more intelligent and successful farmer. By degrees he is led to study more closely the nature and wants of the soil—the treatment adapted to different kinds of plants, and by degrees he applies the lessons learned in the garden to all his farming operations.

The garden is also a great economizer and utilizer of a farmer's time. Suppose that every farmer in the State had at the present time a good vegetable garden attached to his home, how many hours in the aggregate, now wasted in idleness, would be turned to good account—and how many more necessaries and luxuries would be enjoyed by the families throughout the agricultural districts. How many dollars, now worse than wasted in bar rooms and at idle games, would be devoted to rendering our rural homes more comfortable, beautiful, and attractive.

Again, the farmer who cultivates a garden must of necessity and by his own experience learn the important fact that his success does not depend so much on the number of acres cultivated, as upon the manner of their cultivation, and not so much upon the quantity of any one crop produced, as upon the excellence and variety of his crops. The almost universal neglect of vegetable gardens among our farmers may be set down as one of the principal causes if not the principal cause that operates against a more general or universal success of the agriculturists in our State. Strange as it may seem, many of our grain farmers buy almost every article of food consumed in their families from one year's end to another. All the beef, pork, mutton, or other meats; all the potatoes, cabbages, turnips, onions, beans, peas, tomatoes, and other vegetables; all the fruit, and even butter and cheese used in their families for the year, are bought, and have to be paid for out of the proceeds of a single crop of wheat and barley. Thus is kept up a constant drain upon their purses, every day of the year, from the time that one crop of grain is sold until it is time to sell another—and in many cases this drain becomes so great that the proceeds of the grain crop have to be anticipated, and debts accumulate.

Then under such circumstances, if the crop of grain fails, what is the condition of the improvident farmer? Too many have already stared this condition of things in the face, and too many have been thus compelled to reap the reward of this imperfect and reckless system of farming so prevalent in our State. As a counterpart to this want of farmer's or kitchen gardens in the country, we find many extensive and well cultivated gardens clustered about every city and town in the State, so that our markets are as well if not better supplied with vegetables the year round than any other country in the world. Our vegetable dealers in all our towns and cities are among the most successful and prosperous tradesmen in the State, and anomalous as it may appear, yet it is a fact that more of the wealth of these tradesmen has been gained from the profits on sales of vegetables to the farmers of the country than to residents of the towns and cities.

The country peddler is an institution that may be met with the world over. He generally travels from house to house among the farmers selling drygoods, tinware, Yankee notions, and things of a similar character. In California we have this same indispensable institution performing the same duties and supplying the same wants. But here we have also a country peddler of another character—one, under the circumstances, more useful and indispensable to the agricultural or grain districts than the one above referred to. He is peculiarly a Californian institution. He is in fact the grain farmer's *portable vegetable garden*. He buys his vegetables of the dealers in the towns and cities and peddles them about the country. As he deals in articles that everybody in the grain districts wants and scarcely anybody produces, his business is a profitable

and prosperous one. But the fact that his occupation is necessary is a scandal to California agriculture. And the fact that our farmers pay the professional gardeners a good profit on all the vegetables they consume, and then pay the dealer and peddler their liberal profits for handling and conveying them from point to point, is anything but complimentary to the energy, enterprise, and skill of the farmers themselves. So long as such a state of things is allowed to continue, so long will farming in California continue to be an uncertain, speculative occupation, instead of, as it may be, a sure, safe, reliable, and profitable business.

We are aware that many farmers claim that, under the dry climate of California, vegetables cannot be profitably raised in the wheat growing districts of the State. We are also aware that but a few years ago the same doubt was almost universal in regard to the growth of small grains on these same soils. Time and experiment have fully controverted the latter doubt, and we firmly believe that a little more time and a little more experimenting will as fully controvert the former. We believe the defect is not in the climate, nor yet in the soil; and we will endeavor to show that our belief is well founded. We will also endeavor to point out to our farmers the time for planting and mode of cultivation necessary to be pursued in order to succeed in making good vegetable gardens in the grain raising districts, and thus secure to all good, fresh, and healthy vegetables from their own grounds.

There seems to be a prevailing dislike or distate among farmers generally, and more especially among American farmers, to the care and cultivation of kitchen gardens. There is probably no State in the American Union in which the dislike is more deep seated and universal than in California. Our California farmers are possessed with almost a universal mania for the cultivation of broad fields—of extensive farms of from one to ten thousand acres, where more physical and less mental labor is required.

This system is more speculative, has more excitement in it; and if liable to great losses, it still, under favorable circumstances, *may* bring great gains. This element is what gives it favor with our California farmers.

On the other hand, the cultivation of the garden is no speculation. Though a small business, it is safe and sure. But the garden, to be made successful and profitable, requires the exercise of judgment, system, and patience. These, accompanied with a little care and attention at the proper time, would secure to every farmer in our State, whether his farm be large or small, a good garden, from which, at almost all seasons of the year, his table could be supplied with an abundance of the choicest vegetables—crispy and fresh from the soil.

What California farmer, or farmer's wife, would not like, in the early Spring, to be able to step from the house into a well inclosed and well cultivated vegetable garden, in which, each in its appropriate place, were growing luxuriantly all the luscious, early vegetables—such as lettuce, radishes, peas, beets, turnips, onions, potatoes, tomatoes, sweet corn, beans, carrots, parsnips, etc.? No matter if a sweet pea vine, a honeysuckle, a pink, a geranium, or other innocent flowers were allowed a little share in such a garden, in the stead of weeds, they would do no harm, but would add, by their cheerful presence and delightful fragrance, to the pleasurable emotions of the owner or other members of the family when they step out to pluck some of the choice fresh vegetables for the breakfast or dinner table.

After ornamenting the garden it would detract nothing from the

cheerfulness and happiness of the family at the meal if a few of these flowers were permitted to ornament the table; they might in this way preoccupy the places in some young mental gardens that would otherwise be usurped by tares and weeds.

We presume we shall find no one to disagree with us in the proposition that every farmer in the land should have a vegetable garden attached to his house; and we come now to consider the question suggested above: "Whether the grain farmers, in the recognized grain districts of the State where the soil is of a clay or adobe nature, can raise good vegetables with success; and if so, what are the conditions necessary to that success?" To the former portion of this interrogatory we have no hesitation in saying *yes;* and will at once proceed to the consideration of the necessary conditions.

THE WILL.

No man can succeed in any business unless he has the will to do so. Having determined that an object is worth striving for—in this instance that a good garden is worth the trouble required to make and maintain it, he must thoroughly make up his mind that he *will* have one; that he will, in the first place, set apart a piece of land to be especially devoted to the garden; that he will enclose it so as to keep out stock of all kinds as well as fowls. A high, tight board fence would insure the double purpose of such inclosure, and as a wind break, which in many places would be a great benefit. Having determined that he will devote the necessary land for the purpose, and that he will give to the garden the required time, the next consideration is the

LOCATION.

This, for many reasons, should be near the house. Many leisure moments of the farmer himself and of his boys, and hired labor that would otherwise be lost, could thus be turned to good account by working in the garden. Many steps of the housekeeper would also be saved in going to and from the garden to pick the vegetables, and the table would be more likely to be at all times supplied with fresh vegetables, if in the garden.

Again, a good vegetable garden attached to the house tends to add to it the appearance as well as the realities of home. It concentrates the home attachments, strengthens the domestic feelings, and brings into activity many of the finer virtues. If near the house it will be under the eye and supervision of the household, and will be a pleasant resort for females and children of the family; thus administering to their health and pleasure, by inducing exercise in the open air, as well as by affording agreeable and healthy food. There will also more likely be better taste displayed in the arrangement of the garden and more care and attention bestowed in keeping it in a good state of cultivation if near the house; for the reason that the interest as well as the taste and pride of the wife and daughters will be brought into exercise, and have their influence over those who do the labor. It will also be visited by neighbors and friends, with a view to compare notes and make friendly observations and suggestions; and thus will be kept up a friendly and healthy rivalry in neighborhoods, both as to the general arrangement and surroundings of the house and the quality and early maturity of the products of the garden. For what is more unpleasant to a farmer's

family of spirit and pride, than to know that their next neighbors are enjoying the luxury of early asparagus, peas, beans, lettuce, etc., when theirs will not do to pluck for days, and perhaps weeks? The best soil for a vegetable garden is undoubtedly a deep, rich, sandy loam, so composed that it will absorb a great quantity of moisture, and allow it to pass so far below the surface that it can be cultivated very soon after heavy rains, and at the same time retain that moisture so it will keep the surface moist during the dry season. It should contain sufficient muck and clay to give it strength and durability, and sufficient sand to prevent sun or surface burning. It should be porous, to allow the air to penetrate as deep as the roots of vegetables will grow.

We have a great deal of excellent soil for gardens in California. The land along the creeks and rivers of the entire State, outside of the mountains, generally called "made land," is well adapted to this purpose. Many of the small valleys in the foothills and many of the hills themselves contain soil already prepared by nature for the most successful cultivation of vegetable gardens. A very large proportion of the soil in the State, however, located on the broad, open plain, one elevation above the immediate river banks, is too heavy and contains too much clay and sticky substances for the successful cultivation of vegetables. It is too wet in the rainy season, and too dry and hard in the dry season. Such, generally, is the character of the soil in what we have termed the grain districts of the State. While such soils, properly cultivated, are well adapted to the production of the small grains, they require some artificial manipulations and changes to make them good for gardens. To show what these changes are, and how they can be made, will next claim our attention.

PREPARATION OF SOIL.

The soils along our river banks are generally called "made land," and are principally composed of clay, fine sand or sediment, and decayed vegetation. They are of recent formation, and have been made by the operations of nature. The annual deposit of the leaves of the forests, and the annual growth of the grasses and weeds, have been covered by the occasional overflow of the streams, bringing along and depositing fine clay and sand from the mountains. Since the commencement of mining in this country the making of land in this manner has been going on very rapidly. If the deposit has been with too great a proportion of clay, then the soil thus made is heavy, stiff, and sticky, and though very rich and strong and excellent, when properly and carefully worked, for some kinds of crops, it is not well adapted to the production of garden vegetables. It settles too close and compactly together when wet by heavy rains or overflows, and if allowed to dry without stirring, it is so hard and stiff that it is almost impossible to plow or work it at all. If worked in this condition it is unproductive—the lumps and clods refuse to yield to the roots of vegetation the necessary nourishment and food for their growth. If plowed when too wet its condition is still worse—it assumes the hardness of puddled soil or manufactured adobes. Such soil must be worked with the greatest possible care and only when in a proper condition, and even then it is not good for garden purposes. You may with great care get your seed into such soil in good condition, but if you have a Spring shower, followed by warm, sunny days, before your vegetables are out of the ground there will form a crust over them which it will be impossible for the tender shoots to penetrate, and you

will be under the necessity of replanting. We have seen corn and peas, and even beans, after sprouting vigorously, thus prevented from coming out of the ground by a crust formed on the surface.

The proper proportion of sand and vegetable decomposition mixed with the clay tempers the soil and renders it easily worked at all times. It renders it porous and susceptible of absorbing and retaining moisture in the proper degree to dissolve the nutritious elements of the soil, and thus feed and nourish the plants. We have seen just such stiff adobe soils as we have described above completely renovated and converted into the very best of garden land by a single overflow of a river, and a deposit upon it of two or three inches of fine sand. By plowing deep and cultivating and mixing the deposit of sand with the old clayey stiff soil, we obtain a lively mellow and porous soil capable of being worked at almost any time in the year without injury. A soil that will allow the air to penetrate to a great depth, and which will extract from that air sufficient moisture to support the growth of plants in the driest of seasons. We have known large tracts of land bordering the Sacramento River to be thus changed, and more than quadrupled in value, by the deposits of a single overflow. We have known such renovated land to rent annually, for garden purposes, for more money than it could in its original condition have been sold for. Thus nature manipulates and makes land and changes whole sections in a single year from stiff, heavy, and intractable soils to light, lively, and sandy loams, thus doubling and quadrupling their value for many purposes.

A LESSON FROM NATURE.

From such operations of nature, the farmers, on the stiff, clay soils of the prairies and oak openings of our State, including all our red soils, and in fact nearly all of what are generally recognized as the best grain districts, may learn an important lesson. From these operations they may learn just what they may do with a small piece of land to give each of them as valuable a garden spot as nature ever formed. These prairie soils are stiff and heavy, and want to be tempered with sand and vegetable matter. The vegetable matter is always at hand in every barnyard. There are but few localities in this State where plenty of good sediment sand cannot also be obtained within a reasonable distance.

One hundred and sixty feet square—a space sufficiently large—for a good vegetable garden for a large sized family, could be covered three inches deep by almost any farmer, within a year, and he would scarcely feel the expense. Having selected the place for the garden, he should in the first place plow and subsoil it, at least from sixteen to twenty inches deep—two feet or more would be still better. Then draw on the manure—well rotted barn manure would be best—and sand in about equal proportions. Let the whole be thoroughly mixed with the soil, as low down as it has been subsoiled, but leaving a larger proportion of sand and manure mixed with the surface foot of earth. A deep ditch—say three or four feet deep—around the entire plat, with two or three blind ditches, say two feet deep, and equal distances apart running from one side to the other and emptying into the border ditch, would add very much to the life and elasticity of the soil and to its productiveness. It may be doubted by some whether land on the dry plains of California would be benefited by drainage. In answer to this doubt we would remark that the object of such drainage is to introduce air into the soil and thus render it more moist in dry weather, as well as lighter and drier in wet

weather. It has been well and truly said, "that drainage makes cold land warmer, wet land drier, dry land wetter, and heavy land lighter." The principal object to be attained by the introduction of sand and manure, is to open the pores, as it were, of the soil and keep them open; and this object is still more perfectly attained by the proposed drainage. It enables the soil to breathe, and thus extract from the air the moisture as well as the fertilizing gases, and distribute them among the rootlets of the growing plants, just as the lungs of the animal extracts the oxygen from the air and diffuses it through the animal system. Soil thus prepared will thereafter require only an annual top dressing and good cultivation to render it almost incredibly productive.

SELECTING GOOD SEED.

We presume that most farmers will, when they have fairly initiated the garden system in this State, raise and save garden seeds for their own use. It will pay them to do so, provided they understand the true principles of reproduction and exercise the necessary care and patience to practice upon them.

In the animal kingdom it is a well established rule, and one that is generally understood, especially by stock growers and farmers, that "like begets like." This rule holds equally good and is equally important in the vegetable kingdom. In selecting the vegetables from which seed is to be saved for replanting care should always be had to choose only the very best samples. For instance, if you propose to save beet seed, you should select the best shaped and best grown beet, one possessing all the characteristics of color, form, fineness of grain, and all other properties which it may be desired to reproduce.

Then care should be taken to plant the beet in such soil and location as will secure to the seed the best possible chance to grow and mature in the most perfect manner. From the seed thus carefully grown none but the *best* should be saved for planting. The same care should be exercised in regard to producing the seed of all other vegetables. By so doing and by the interchange of seed between different countries and different localities in the same country all our crops of vegetables and grains may be much improved.

It is the present practice of most of those farmers who cultivate gardens, whether as professional gardeners or only for their own tables, to buy all their seed from the various seed stores in the towns and villages. This practice has one advantage—it secures an interchange from one locality to another; but we find that as a general rule those who produce the seeds so sold neglect a strict compliance with the acknowledged rule of reproduction above referred to. Their seeds are sold by the pound, and the more pounds the more dollars.

Without desiring to decrease the business of any one enterprising seed man, we would recommend that each farmer, as soon as possible, inaugurate the practice of producing his own seed of all kinds. He may then interchange frequently with his neighbors and friends who exercise the same care with himself, and he may thus improve all his crops from year to year. In the long run we think this will be found the most economical plan, as we shall never be subjected to the trouble, expense, and vexation caused by planting dead or poor seed, and being under the necessity of replanting and suffering the loss of time thereby.

TIME FOR PLANTING.

One of the greatest mistakes connected with gardening in this country is in planting many varieties of seed at the wrong time of the year. Our Winters are so mild in this State that many varieties of vegetables will grow better and be more tender, juicy, and more delicately flavored if grown in the Winter or rainy months than if grown in the Summer or dry season. The seeds of such kinds should be planted in the Fall instead of Spring.

Our professional gardeners, especially the Portuguese, Italians, and Chinese, understand this, and hence we are so often found admiring the luxuriant growth of the vegetation in their gardens when our own gardens are not yet planted; and hence, too, the "China vegetable man" takes many a dollar from our pockets for vegetables before ours of the same varieties have made their appearance above ground.

The markets of our cities and towns are supplied with beets, carrots, parsnips, cabbage, radishes, lettuce, celery, salsify, small onions, and other kinds of vegetables, fresh from the grounds of the professional gardeners and in good condition, during every month of the Winter season. These vegetables are all grown in the open air. The seeds are planted in August and September while the ground is warm, and with care and attention and irrigation they are made to germinate and grow until the first rains fall. These rains find the soil warm, and the rains themselves are generally warm like Spring showers. The vegetables thus started grow rapidly and continue to grow during the whole Winter. Here we have a lesson for our grain farmers to learn and imitate. From a small piece of land, prepared as we have directed and sheltered from the winds, the table of every farmer in our State may be supplied with the greatest abundance of fresh vegetables of all the above varieties from October to May.

From this time on may be added asparagus, rhubarb, early peas, cucumbers, green corn, early beans, squashes, tomatoes, potatoes, and other early vegetables. As the season advances the later kinds and other varieties come on and supply the place of those that are gone by. Add to these luxuries strawberries, raspberries, currants, grapes, cherries, and other and larger fruits in their seasons, and we have a continuous supply of the most delicious vegetables and fruits the year round. Then by a little forethought fresh milk, butter, and cream may be provided from two or three good cows pastured in a small field of Chile clover that will keep green the year round.

With these facts before us, all of which may be fully realized by any careful and industrious farmer in this State, we may well exclaim, who can live *better* or *cheaper* and more *independent* than a California farmer! What advantages he may enjoy over his neighbors of the Atlantic States or most any other part of the world!

It seems not to be generally understood that pea vines will stand a pretty heavy frost without much injury, and that peas planted in the month of January or February will grow and make vines and be all ready to blossom and bear peas upon the first appearance of warm Spring weather. Such is the fact, and if peas are planted in February in good warm soil, and in a protected locality, they will generally furnish this delicate vegetable for the table before the time it is now generally the custom to plant the seed.

Potato tops are easily checked in their growth by a slight frost; but

unless the frost is pretty severe this injury does not reach below the surface of the earth and is but temporary. The roots continue to grow and the tops start up again with renewed vigor.

As a general thing it is safe to plant early varieties in February, and by covering the surface with straw or coarse stable manure they may be brought forward very early—so early in fact that no inconvenience will be experienced from the wilting of the old potatoes before the new ones will be large enough to take their place on the table.

It is too generally the received opinion among farmers on the uplands, that potatoes cannot be raised on such soil. If the land be prepared as we have suggested, and the potatoes are planted early, so that they will have the benefit of the late Winter and Spring rains, they will make a good crop, and form a most acceptable dish on the table when fresh dug from the garden.

HOT BEDS.

Professional gardeners understand and appreciate the advantages of hot beds in bringing forward for the market their early vegetables. Professional florists also avail themselves of the hot house or green house to bring forward their early flowers. With a little care and extra expense they each, in this way, obtain extra prices for their products, and are well repaid for the extra expense and labor. In this country, above all others, liberal prices are cheerfully paid for vegetables, fruit, and flowers offered for sale out of the ordinary season, either *very* early or *very* late.

But farmers being generally away from the towns which afford markets for the professional gardeners, cannot, even if they would, avail themselves of the luxuries of these extra early vegetables from the market gardens. They must therefore either deny themselves and families many luxuries enjoyed by the denizens of the towns, or contrive some mode of producing those luxuries for themselves. We are among those who believe that, above all classes of people, the farmers may and should become the best livers, in all respects, in any country, and especially in California.

We believe that the farmers of California, if they choose to avail themselves of the advantages they naturally possess, may enjoy more real and substantial luxuries—luxuries, we mean, produced from the soil—than almost any other people in the world. It shall be our aim to point out the ways and means by which these luxuries may be produced and enjoyed.

Early vegetables cost the denizen a considerable *money*—they would only cost the farmer a little *time*, with the additional advantage in favor of the farmer that he and his family might enjoy them direct from his garden, fresh and crispy, while before they appear on the table of the denizen they have been handled and mussed over till they have lost half their attractiveness and real value.

If there is one farmer in this State who has a hot bed, made and used exclusively for the purpose of producing early vegetables for the use of his family, we have not seen that man. We do know of many who make it a practice to make hot beds every Spring in which to sprout their sweet potatoes, but they seldom use them for any other purpose. Those who raise sweet potatoes for sale are compelled to have hot beds to obtain the sets, otherwise they would not probably make them.

HOW TO MAKE A HOT BED.

Farmers generally imagine that it is a great deal more trouble and expense to make a good hot bed than it really is. Many of them never having seen one do not know how to make one, and never having experienced the advantages of one cannot appreciate them. For the benefit of such we give the following cheap and easy mode of construction and management: Make a frame or box, say three feet wide, and six, nine, or twelve feet long, depending on the size of the bed you desire. It may be made of inch boards and should be, say one foot deep in front and eighteen inches on the back. Dig out a trench in the garden on the south side of the fence the same size as the frame and eighteen inches or two feet deep. Fill up with fresh horse manure mixed with straw—about as it comes from the stable where horses are carefully bedded with straw—to the depth of a foot or fifteen inches. Then put on the frame and cover the manure from eight to ten inches with good, rich, sandy loam, or light warm soil, that will not bake or crust over when sprinkled with water. Bank up the outside of the frame with the same kind of manure used inside, and cover with common window sash of the proper size to cover the frame, and your hot bed is completed; and as soon as the manure begins to ferment and heat it is ready for use.

How much has it cost? About one day's work, and the price of the windows used. The expense of the window may be dispensed with, and any old piece of canvas, or a bed sheet, or old mat may be used instead and answer a very good purpose, though the glass is better, as it lets in more light and heat from the sun.

Now plant your seed in rows across the bed and in a few days you will have the satisfaction of seeing the plants for an early garden bursting up through the warm soil. In warm pleasant days the cover should be left off, and the plants should be sprinkled with water from which the chill has been taken just enough to keep the soil moist and steaming. As soon as the weather is warm enough, and the plants of sufficient size, they may be transplanted to the warmest part of the open garden, being careful to protect them from the cold nights, if any occur.

By this simple means every farmer's table may be supplied with a plenty of all kinds of vegetables as early as they appear in our market, and much better. Try it once, and we guarantee that it will pay.

TIDE AND OVERFLOWED LANDS.

As Corresponding Secretary I received an invitation to accompany an excursion to the swamp and overflowed lands located about the confluence of the Sacramento and San Joaquin Rivers, and deeming them of so much importance to the agricultural interests of the State, I propose to give a brief description of those lands, both as to their location and character.

As many of our readers have probably never given much attention to the subject of the tule and overflowed lands of our State, we will first very briefly give them a general idea of the location and character of these lands, and the means adopted for their reclamation.

The two great rivers above named, and all their large tributaries, have a strip of tule land on each side of them stretching from their entrance

into the valleys to the points where the latter empty into the former, and from thereon until the former reach and lose themselves in the bays leading into the Pacific Ocean.

Originally these rivers are supposed to have flowed through the lowest points in the valleys, but the annual overflows to which they are subject have gradually deposited debris and sediment on their immediate banks until all through the upper portions of the courses and until they approach their mouths, these banks are from ten to twenty feet higher than the lands, from one half mile to three miles back, so that all our navigable rivers are literally "highways of commerce." Into these low lands or basins thus formed empty numerous creeks from the foothills of the Sierra Nevadas and Coast Range of mountains, and the overflows of the rivers at high stages of water keep them full during the wet seasons, and generally well into the Summers. Hence the soil becomes wet and swampy, and all vegetable growth coarse and rank.

To this coarse grass the Indians gave the name of "tule," and this name has hence been applied to the lands themselves.

As the Sacramento and San Joaquin Rivers approach the straits and bays into which they flow—only a few miles apart—their banks gradually become lower and lower and the distance back to the edges of the tules becomes less, until finally the rivers themselves seem to break up into a great number of smaller rivers or watercourses, called sloughs. These sloughs stretch out to the right and left, dividing the tule lands into a great number of islands of all shapes and sizes, until hundreds of thousands of acres are thus cut up and surrounded by a system or net work of navigable watercourses.

The islands thus formed, like the banks of the main rivers, are generally higher next the water's edge than in their centers, and for similar reasons; but these banks are generally but little above high tide at the low stage of water in the Summer season. The waters of the rivers, however, having here so many channels through which to flow, are comparatively but little affected by a rise which overflows the banks of the main rivers and floods the whole country above. Hence it is comparatively a much easier task to keep the waters of the sloughs from overflowing these islands than it is to keep the waters of the main rivers higher up the country from overflowing their banks and flooding the tule lands we have described as stretching along on either side of them.

THE IMPORTANT FACT

So potent to all now, has only been discovered and practically appreciated by the people of this State, after an experience of nearly twenty years, derived from an almost constant yet fruitless and costly effort to reclaim the tule lands along the main rivers of the State.

For the discovery and practical demonstration of this valuable truth we are indebted to a few humble farmers, who some twelve or fifteen years since settled upon Sherman Island, and who have since that time pretty effectually reclaimed the whole island from overflow and brought it into a good state of cultivation. In doing so they have acquired for themselves and their families a good competency, if not a fortune. While these men were struggling along from year to year, alternately cultivating their crops and working on their levees,

GEORGE D. ROBERTS,

A gentleman who is now the great leading spirit in nearly all the swamp land reclamation enterprises of the State, was a practical and successful miner in Grass Valley, Nevada County. Having met with some severe losses in his mining operations, he was looking about him for some other and more safe place to invest his money. By accident his attention was called to the operations of the farmers on Sherman Island. He went personally to investigate the whole subject for himself, and having observed the productiveness of the soil and the feasibility of the reclamation of all the islands similarly situated, he at once commenced buying up these lands and urging his friends to do likewise.

He soon succeeded in forming what is known as the Tide Land Reclamation Company, composed of some of the heaviest and most enterprising capitalists in the State. For the last two years he has been perfecting plans of reclamation, organizing labor and machinery for their completion, and calling the attention of the public to the great value of these lands, and to the additional wealth and prosperity their reclamation and cultivation would bring to the State. For this latter purpose he conceived and organized

THE EXCURSION TO THE TULE LANDS,

To the valuable incidents and lessons of which we will now call the attention of our readers. The invited guests were about eighty, consisting of business men, capitalists, and representatives of the press, mostly from San Francisco, Sacramento, Santa Clara, Yuba, and Nevada Counties.

The party left Sacramento at about eight o'clock on Friday, October twentieth, eighteen hundred and seventy-one, on the steamer Victor, Captain Sommers. After stopping at two different points on the river we arrived at R. Kerchival's, at the head of Grand Island, at noon.

This island lies directly in the forks of the Sacramento River, and about twenty-five miles south of Sacramento. It is the first of the system of islands formed by the breaking up of the river into sloughs, as above described. It is bounded on the east by what is called the Old River, and on the west by a branch called Steamboat Slough. It is favorably situated for catching the debris and sediment floating down the river, and hence, as might be expected, the banks are higher and more firm than those of the islands further down. The strips of land between the immediate banks of the river and the tule toward the center of the island is quite wide, and for four or five miles down on either side is occupied by settlers, most of whom have very fine farms in a good state of cultivation. The climate here is excellent, being a happy medium between the windy region further south and the oppressive heat further up the river.

The country for six miles above this point, and as many miles below, is without exception the best for peaches in the entire State. The early and late Crawford peaches, which at Sacramento are hardly worth raising, here grow and ripen in the greatest perfection, and make the most valuable market peach we have. The plum, apricot, and nectarine also flourish in great perfection here. Apples and pears do well, and grapes grown here, though of but little value for wine, command the highest

prices in the market for table use, being very large, well covered, and of most excellent flavor.

We went back from the river about a mile here for the purpose of examining the soil where a deep ditch was being cut; this ditch being the upper end of the canal which is to be dug through the center of the island for drainage purposes. We found the surface, about a foot deep, to be a fine yellowish sediment of tule deposit; then to the depth of about four feet more the soil was a mixture of loam and clay, checkered with streaks of decayed vegetable matter. We did not see the soil deeper down, but were apprised by Mr. Kerchival, who had the ditch dug, that immediately underlying this clay was a strata of some four or five feet deep of almost unmixed decayed vegetable matter, having much the appearance of a rotten dunghill. This island is about twelve miles long, averages about three miles wide, and contains about seventeen thousand three hundred acres; of this about seven thousand acres, mostly next the river banks, is owned by settlers. About two thousand acres, running diagonally across the island from water to water, is owned by William Gwynn and Henry Miller, of Sacramento, and the balance, the center portion, is owned by George D. Roberts.

It is estimated that six dollars and thirty cents per acre will defray the entire expense of the work necessary to keep the water off this island. The levee around the island will be about twenty-nine miles long; about twenty miles of which is already completed and the balance will be done in five weeks time. The work is let to Chinamen by the job, at from twelve to seventeen cents per cubic yard. There are over five hundred Chinamen now at work on the levee. The average width of the base of the levee is thirty feet; it is six feet high. The width of the top is three feet, and the inside slope is one and a half to one, the outside is two and a half to one. The earth is taken from the outside or next the river. All the sloughs making into the island are substantially dammed and provided with flood gates, so arranged that the gates close at high tide and open at low tide; so that while the water is prevented from passing in, all the seepage water runs out. The same gates will answer the purpose of irrigation, should it ever become necessary.

NEXT YEAR'S CROP.

It is the intention of the owners of the tule land on this island to have it all cultivated and cropped next season. They propose to lease it on shares for a term of three years. The tule is now being burned off of some portions of it, and all will soon be in condition to burn. After the tule is burned, it is expected that most of the land on this island will require to be plowed before sowing. On the islands, lower down, such as Sherman and Twitchell, the surface being composed mostly of decayed vegetable matter, when once dry, will burn down until the fire reaches the water, and is stopped by it. On Grand Island, as we have stated, this same vegetable matter is found in most places, some five feet below the surface, having been covered by late deposits of sediment which is gradually forming into loam and clay.

The sediment and clay, however, instead of raising the surface of the land equal to the thickness of their deposit, seem by their weight to have sunk the vegetable matter nearly that much into the water except near the banks where the soil is thickly studded with the roots of trees, which seem to have held the soil to its normal position. This fact secures to this island all the advantages of water near the surface, and

at the same time it has a soil rich in the elements of production and most certainly so in those of durability.

LATE POTATOES.

While our attention is on Grand Island we will state that on our return trip, when most of the party had gone to San Francisco and Sacramento on the regular boats, the Victor ran up through Steamboat Slough and stopped at a ranch on this island, some two miles from its head, in order to let us see some late potatoes growing on the tule land.

They found here a field of fifteen acres of potatoes growing most luxuriantly, the bulbs being quite plentiful in number and generally of fair size—some being as large as a man's fist. They were of the Pigeon Point red seed. The tule, which was very heavy and tall, had been cut down in June, and after drying had been burned. The ground was then plowed and harrowed well, and plowed and harrowed the second time. The potatoes were planted between the twenty-sixth of July and the second of August. Had Early Rose seed been planted, the crop would have been ripe and could have been dug some time since.

ANDREW'S ISLAND.

On the east and southeast of Grand Island, and separated from it by the Old River, lies Andrew's Island. This is as long as Grand Island, but not more than a mile wide on an average. Some four or five farmers in the center of it have clubbed together and built cross levees above and below them and next the sloughs on either side, and have produced this season most excellent and satisfactory crops of wheat, barley, corn, potatoes, and other vegetables. No general work for reclaiming this island has yet been commenced, but we understand there soon will be.

Still to the southeast of Andrew's Island are two other long, irregular islands—Tyler and Staten—containing about twelve thousand acres each, and separated from Andrew's Island by the Georgiana Slough and by the North Fork of the Mokelumne River. We did not visit these islands, but they are said to contain very valuable tracts of land and susceptible of easy reclamation, which is already commenced.

SCHOOLCRAFT ISLAND,

Containing twelve thousand acres of land, lies directly west of Grand Island, being bounded on the north and west by Miner's Slough, and on the west by the west branch of the Sacramento River. The land of this island, viewed from the boat, seems lower than that of Grand Island, and has not been covered with so heavy a bed of sediment. It looks as though it might be more difficult of reclamation. The next island visited by the excursion party was

BRANNAN ISLAND,

Which lies directly south of Grand Island and east of the town of Rio Vista. The reclamation company own most of this island, and are now engaged in damming the sloughs that put out into it, and putting in flood gates preparatory to a thorough reclamation by levees. Upon this island, at Smith's ranch, we found a fine vineyard of Mission grapes. The bunches were the largest and most compact we have ever seen of

this variety, and the grapes were very large and fine flavored. In this vineyard we noticed the salt grass growing most luxuriantly, indicating the presence of alkali, which, however, seemed to produce no visible effect on the vines or fruit.

We also noticed here fig trees of the large purple variety, full of fruit, in all stages of growth, from the size of a kernel of corn to the full sized, ripe, and luscious fig. At Sacramento the second crop of fruit all ripened on this variety of trees some three weeks since, and no more is starting. This difference in bearing must be attributable to the difference of climate and supply of moisture to the roots.

It being now near night, and Mr. Roberts wishing to save all the time he could and enable his guests to see as much as possible of interest by daylight, headed the Victor for

THE WEBB TRACT,

A large piece of swamp land in Contra Costa County, fronting on the south bank of the west channel of the San Joaquin River for some twenty-five miles, and running back to the high lands. It contains about fifteen thousand acres, and is owned by Roberts, Kimball, and McMurtry, who are driving forward the work of reclamation as fast as possible.

One advantage this tract has over those on islands is that it runs back to high lands, and in times of very high water stock can be very easily driven to these lands for safety. Another is that the expense of reclamation will be less, requiring a levee only on one side. We notice the owners fully appreciate these advantages, as they hold the land at one hundred dollars per acre for the entire tract. The levee is being constructed here by machinery. There are two steam machines at work by the job or contract at ten cents per cubic yard.

THE ROBERTSON MACHINE

Works very similarly to the ordinary dredging machines. It is transported on a scow which floats in the canal made by the excavation. It cuts the canal or ditch twelve feet wide and four feet deep at one swath, and deposits the earth on one side in the shape of a rough levee, which is afterward faced up with the shovel by Chinamen. It does its work well and makes on an average about three hundred and twenty running feet of levee in a day. Considering that this machine is the first and only one built under the patent, it is a good success and promises to become valuable to its owner, and very useful in the reclamation of the tule land.

THE ROBERTS MACHINE

Is moved on wheels, laying and taking up its track as it goes. It cuts four feet wide and four feet deep at a swath, elevating the earth by an endless chain elevator, and depositing it on the opposite side of the ditch from that occupied by the machine. To widen the ditch and increase the levee it repeats the swaths, lengthening the elevator and depositing the earth each time on the top of the first deposit. We did not see this machine work, but were assured by Mr. Kimball that it was generally considered as a more promising one than the other.

SHEEP AND CATTLE.

On one portion of this tract, the proprietors have twenty-five thousand head of sheep, which have been grazing there all Summer, and look in a very good condition. Another portion of ten thousand acres is leased to Lux & Miller, of this city, who have on it eleven thousand head of cattle—less than an acre to an animal. These cattle have occupied this pasture since Spring, and they are now in such a condition that their owners are making weekly shipments to supply the San Francisco market with beef. We noticed, growing on this tract, a number of varieties of clover, and a great profusion of native grasses. When fully reclaimed and burned, we have no hesitation in believing each acre of the entire tract sown in Chile clover would produce annually from six to nine tons of good hay, and in addition keep an ox or horse in good condition from September each year until the first of December.

BURNING THE TULE LANDS.

On the lower end of the Webb tract the proprietors propose to plant this season five thousand acres in wheat. This portion was ditched last year and has "dried out," as they term it, when they mean to say the land is ready to burn.

Here we saw the burning process in operation. The tule and grass is set on fire and is rapidly consumed. But the fire is not satisfied when it reaches the soil, but penetrates and consumes this also until checked by the dampness underneath. This reached, the burning ceases, leaving a few inches of light ashes and charred soil as the remains of the spongy vegetable composition. This process lowers the level of the land from four to six inches. In this condition the land is ready for the seed, but being too soft and miry to support the weight of horses or cattle, it cannot be cultivated with teams and harrows in the ordinary way.

Hence the plan of treading in the grain with *sheep* has been resorted to and found to work well. The large flock is divided up into smaller ones of two or three hundred each, and a boy and shepherd dog takes charge of each of these small flocks—driving them back and forth as you would drive a team with a harrow, until the whole ground has been tramped over. This is the way the first crop is put in.

The second year the land is generally volunteered. The sheep are brought into requisition in this process also. Too much grain generally falls to the ground, while harvesting, to seed it properly for a good crop; so immediately after harvest the sheep are turned in to pick up this surplus seed, and while picking up some they tramp in the rest, leaving the ground seeded about right and well tramped in.

TWITCHELL ISLAND

Was the next point visited. This island lies directly south of Brannan Island, and north of the San Joaquin River. It contains three thousand six hundred acres. It was leveed last year, but not in time to "dry out" the land in the center sufficiently to burn, so that only one thousand acres, and that in a strip around the edges, was sown to wheat. The Reclamation Company last year sold this island to Minor, Prather & Co.—one of the firm purchasing being George D. Roberts—for sixty-eight thousand dollars, after the work of reclamation was completed.

The proceeds of the wheat crop raised on the one thousand acres planted has been sixty-seven thousand seven hundred dollars—within three hundred dollars of the entire purchase money. Besides this, there are several thousand dollars worth of vegetables now on the land not yet gathered.

The center of the island is now being burned preparatory to seeding and tramping, while the sheep are fattening on the surplus grain left on the last year's stubble, and tramping in or volunteering what they cannot eat.

The levee around Twitchell Island is twelve feet base and three and a half feet high. The wagons used on this island have wheels with felloes and tire six inches wide. The steam thrashing machine and boiler were provided with like wide-wheeled wagons. This precaution is necessary to make them float, and yet, as they roll along over the surface, they stir up clouds of dust.

SHERMAN ISLAND

Lies between the two largest rivers in California—the Sacramento washing the northwestern bank and the San Joaquin the southeastern. The head of the island is within three miles of Rio Vista, and the foot directly opposite Collinsville. We judge it contains about twelve thousand acres; it was the first of this great group of islands leveed, and is in a more forward state of reclamation and cultivation than any other.

We visited but one farm on this island—that of A. J. Bigelow, on the Sacramento River. Mr. Bigelow owns four hundred and thirty acres lying in a body—about half under cultivation. If we had seen nothing before, we saw enough here to convince us that the resources of our State are but just beginning to be known and developed, and that the garden spot of California will yet be found in the tule lands forming the deltas of her two great rivers. Here were grapes, strawberries, watermelons, muskmelons, sugar beets, mangel wurtzels, carrots, parsnips, turnips, squashes, corn, tomatoes, wheat, barley, Chile clover, red clover, timothy, and we cannot say how many other horticultural and agricultural products growing, and all in the greatest perfection, on a soil, the cost of which is not much over half the cost of cultivating the soil of the ordinary upland, while the chances of a failure of any crop, when the seed is once in the ground, are scarcely to be taken into consideration. We were so pleased with the general exhibition of farm products, that in the short time which we had to remain we could gather but few specific facts.

One field, however, we learned was sowed in February last to barley and Chile clover at the same time. There had been gathered from this field a crop of barley of over sixty bushels to the acre, and since that time the clover had been mown twice, yielding each time a ton and a half per acre, and the third crop was nearly in bloom again. Another field was sown to wheat and Chile clover in February. From this field had been gathered forty-five bushels of wheat to the acre, and one crop of one and a half tons of clover per acre had since been cut, and for three weeks two or three head of stock had been feeding on each acre, and the feed was still knee high and growing luxuriantly.

The people of Sherman Island have laid it off into school districts, and have already at least one good public school in operation. They have also laid out public roads, and have a Post Office, and a good wharf at the town of Emmaton, on the west side of the island, at which the Sac-

ramento boats stop every day on their up and down trips. Indeed, they present every indication of a wide awake and prosperous community. Lands there, brought under cultivation, are worth and being sold, when sold at all, for from fifty dollars to seventy-five dollars per acre.

OTHER ISLANDS.

In addition to those above named, we may mention Bouldin, Venice, and Mandeville Islands as in progress of reclamation, each containing from five to eight thousand acres of land, the soil of which is very similar to that of Twitchell and Sherman.

ROBERTS AND UNION ISLANDS.

At a point some twelve miles nearly south of the City of Stockton, where the San Joaquin River divides, one branch called the San Joaquin proper, runs nearly north to within a few miles from Stockton, then bears westerly in a very crooked line to a point at which the Town of Venice was founded and built on paper; the other branch, called West Channel, drops off to the southwest, and finally sweeps back and rejoins the main river about three miles below Venice. The greatest distance between the two rivers is about eighteen miles. The oval-shaped piece of land thus surrounded by these two channels is traversed, a little south of the center, by another river called the Middle Channel, thus forming the two large islands known as Roberts and Union Islands—the former contains sixty thousand acres, and the latter from forty-five thousand to fifty thousand, nearly all of which belongs to the Reclamation Company, and is claimed by them to be susceptible of easy and perfect reclamation, and when so reclaimed to be among the most valuable of their swamp land possessions.

DIFFERENT CHARACTERISTICS.

There is a striking difference between the topography of the Sacramento islands, or those washed by the waters of the Sacramento and the sloughs making out of it, and those washed by the San Joaquin and its branches or sloughs. The banks or edges of the former are considerably higher above low water mark than those of the latter, and are all studded with bushes—mostly willow; and with sycamore trees, from twenty to fifty feet high, while the centers of the islands are entirely desolate of shrubs and trees, being covered by a very tall and heavy growth of tule. The banks of the San Joaquin islands, on the contrary, appear to be no higher than the centers, and are almost uniformly destitute of bushes and have no trees of any size, while the centers of the islands are dotted with bunches of willow, and the tules are thinner and shorter—being mixed with a much greater quantity of coarse grass of different kinds, including now and then patches of California clover. Again, the soil of the Sacramento islands is to a great extent clay and a late deposit of fine yellow sediment, underlying which is a strata of almost pure decomposed vegetable matter. On the other hand, the surface soil of the San Joaquin islands has scarcely any other material in its composition than this decomposed vegetable matter.

OVERFLOWS.

The Sacramento River, it is well known, is subject to more frequent overflows than the San Joaquin. The cause of these more frequent overflows is attributable to the fact that the Sacramento has a number of large branches leading direct from the Sierras, and bring to it large accessions of water, while it has but one channel through which to convey these waters until they reach the head of Gravel Island, where they meet a heavy ebbing and flowing of the tide. The San Joaquin, on the contrary, as we have seen, is divided into three about equal channels, some twelve miles above Stockton, which do not again unite until within a few miles of the Sacramento, when another system or network of sloughs come immediately to its relief, and assists in conveying its waters to the broad and deep channel opposite Sherman Island. Again, there is more mining on the Sacramento and its tributaries than on the San Joaquin, and this fact, coupled with the more frequent overflows, accounts for the higher banks and heavier soil of its islands. The difference in timber and vegetation follows the difference in soil—the heavier the soil, dampness being equal, the heavier the growth of trees and vegetation.

TULE ISLANDS AS HOMES.

There is but little doubt that most if not all the islands that we have named can be reclaimed so as to render these lands very valuable—more reliable, in fact, for producing annual crops, or in other words, less liable to failures on account of overflows, than the uplands are on account of drought. Indeed, with the facilities they possess for irrigation, they may be kept up to a good degree of fertility under a system of constant cropping for a long series of years, or an indefinite time, without any other fertilizing applications except what will be supplied from the water. But the important question in reference to their settlement is, can they be made so secure against overflows in such times as eighteen hundred and fifty-two and eighteen hundred and sixty-two as to render property of all descriptions and the lives of the inhabitants safe upon them? For all ordinary seasons we are of the opinion that the present plan of reclamation—ditches and levees—provided always that the levees are made sufficiently high and strong, and watched with care, and kept in good repair, will render them safe not only for the accumulation of property but as homes for the families of their occupants. But how will it be in case of such a flood as that of eighteen hundred and sixty-two, when all the lower country becomes so filled up with the accumulated waters as to check the current in the Sacramento River as high up as the City of Sacramento and in the San Joaquin at Stockton? These islands were then all under water to a depth of equal to if not greater than any of the levees being constructed upon them. When these islands are all leveed, as is now the intention to do, and an attempt is thus made to confine such a bulk of water in the narrow sloughs, will it not necessarily be forced up to a greater hight than when allowed to spread out over hundreds of thousands of acres in extent?

This question addresses itself not only to the individual who owns land here and who proposes to make a home for himself and family, or to have others do so, but it addresses itself to the people of the entire State—to the State Government—whose duty it is not only to reclaim

these islands but to protect the lives and property of its citizens who may live upon them.

ADDITIONAL OUTLET.

Those who have made the reclamation of the swamp lands of this State a study, and who understand the question, have long since come to the conclusion that some additional outlet, through which the waters that accumulate, on the occasions of great and long continued floods, at the confluence of the Sacramento and San Joaquin Rivers, above Rio Vista, may escape more rapidly into Suisun Bay, is a matter of very great if not absolute necessity.

A number of plans for the accomplishment of this object have been suggested by engineers and others, some of which are doubtless practicable and feasible. One which seems to have the approval of many largely interested, and in which every owner of swamp land on the Sacramento and San Joaquin is interested, is to tap Linda Slough, which is a southern branch of Cache Slough, by a canal running back of the Montezuma hills directly into a tributary of Suisun Bay. The distance across is but about seven miles, and the fall from point to point is said to be fourteen feet, or two feet to the mile. The highest point of elevation is some thirty feet, but the distance at this elevation is very narrow—most of the way being but little above the water level. This or some other outlet should be constructed without delay. The interests at stake are too great to be longer sacrificed.

Such an outlet would materially enhance the value of every acre of land lying within the swamp land districts of the Sacramento and San Joaquin Valleys, and these lands should be assessed to construct it. This subject should be brought before the next Legislature early in the session, so that provision for its accomplishment may be made before the close of the session.

THE CUT-WORM.

BY I. N. HOAG.

This is the American name of one of the most destructive insects in the country. It is sometimes called the corn grub, from the fact that it is so destructive to young corn. In English agricultural works these worms are called surface grubs or caterpillers, from the fact that they are always found near the surface of the ground.

The American name seems very appropriate from their habit of cutting off young and tender plants, upon which they feed, as smoothly as if done with a keen edged knife. There are many varieties of this worm, each varying slightly from the other in appearance, and each differing a little from the other in its habits and modes of depredation on growing vegetables. The most common and the most destructive variety is called the

STRIPED CUT-WORM.

It is particularly described by Doctor Asa Fitch, Entomologist, to the New York State Agricultural Society, as a cylindrical worm, usually about an inch in length when disinterred beside the several plants in our gardens and corn fields, and upwards of an inch and a quarter when it is fully grown. Its ground color is dirty white or ash gray, occasionally slightly tinged with yellowish; the top of its neck shining black, with three white or pale longitudinal stripes, a whitish line along the middle of its back between two dark ones. On each side three dark stripes separated by two pale ones, whereof the lower one is broader, often a somewhat glucous white stripe below the lower dark one, and all the underside below this dull white.

THEIR HABIT OF CUTTING YOUNG PLANTS.

Some of this family of worms cut the young corn or other plants, such as tomatoes, cucumbers, melons, wheat, barley, and oats, just below, and some just above the surface. But all alike lay covered in the earth during the daytime, and only come forth to seek their food and do damage in the night. Owing to this habit they are comparatively safe from being devoured by fowls and birds; as also from being caught and destroyed by man. In seasons when these worms are plenty they do great damage, often destroying the crops of the garden, and corn in the fields, so that it becomes necessary to replant several times before a good start for a crop can be made. Sometimes their depredations are so extensive and persistent as to render it necessary to abandon one kind of crop, and plow and plant some other kind not so liable to be injured by them.

REMEDIES.

In cold countries, one of the most effectual modes for destroying these pests has been found to be plowing them out during the freezing season, when in a torpid condition and unable to seek protection under the earth until the frost has done its work. By thus exposing them suddenly to the cold and freezing weather many of them are destroyed, and the ground rendered comparatively free from them the following season. Gradual freezing, however, in the ground and in the places selected and prepared by these worms, it has been found does them no injury. Like many other insects and reptiles, if allowed to freeze gradually with the ground and thaw out gradually undisturbed, they come forth unharmed.

This remedy, however, cannot be rendered effectual in but few of the cultivated portions of California or the Pacific Coast, for the reason that we do not have weather sufficiently cold. When their field of operation is limited, as in small gardens, these worms may be caught and destroyed, by digging from one to two inches deep around the hills of corn, cucumbers, or other vegetables upon which they are feeding. The best time for this operation is early in the morning, before they have gone far after obtaining their night's meal.

This remedy is slow and too expensive to be resorted to for field crops. It has been recommended that corn or other seed be soaked in copperas water before planting; but it is doubtful if this is of any avail, on account of the rapidity with which the earth absorbs and dispenses the properties of the sulphate. If any application can be made effectual to prevent the ravages of the cut-worm, it is evident it should be something applied to the parts of the plants upon which they feed—as the tender stem—and that should be applied at the time they are committing their depredations.

WHALE OIL SOAP

Has been found a most excellent remedy for all kinds of plant and tree lice, including the woolly aphis so frequently infesting our apple trees. It is used in solution or suds made by dissolving about a pound of soap to seven gallons of water, and applied by a syringe.

The efficacy or value of this application is owing in part to the peculiar offensiveness of the smell. Why should not this application, made in the same way, prove equally efficacious to keep away the cut-worm from the young corn, tomatoes, beans, cabbages, etc.? We hope some or many of our readers will try this experiment. One thing is certain, the application will do any young plant good as a fertilizer, and with a bucket of suds and a syringe it can be applied so rapidly as to render it practicable in the fields as well as in the gardens.

HEDGE OR LIVE FENCES.

BY I. N. HOAG.

In any country where wood is scarce (and it seems to be getting scarce the world over), in these days of railroading, wharf building, etc., it becomes a question of no small moment to the agricultural interests to find some substitute for rail, or post and board fences. In this State the expense of fencing land is getting to be one of serious consideration to the farmers. It is operating as a serious drawback to the agricultural interests, and indirectly to all others.

There are but few of our good agricultural districts furnished with a sufficiency of good fencing timber near at hand. Most of the lumber for boards and fences has to be transported from high up on the Sierra Nevada mountains, or from the timber districts of Oregon, and the coast still farther north. All, or very nearly all, the timber for posts comes from a few of the coast counties.

Thus our agriculturists, in all the great central portions of the State, are not only compelled to buy most of their fencing material, but have to pay high rates for transporting the same, by rail or otherwise, from points hundreds of miles away from where they want to use it. These considerations are used with great force in favor of adopting the European plan of fencing—or rather, of *not* fencing.

In the agricultural districts of Europe it is a rare thing to see a fence, even on the division lines between estates, or along the road sides. Very few farmers are able to bear the expense of dividing their farms up into fields, as is the custom in all agricultural countries in America. In many portions of Europe, and more especially in England, a system of growing live or hedge fences has been practiced for many years or generations back. But in most of those localities the land has become so valuable that even these fences are, to a great extent, being dispensed with, the convenience of fences being considered of less moment than the value or use of the land on which they stand.

The American farmers on the contrary have a plenty of land, and have become strongly wedded to the system of dividing off their farms into fields of convenient size for different varieties of crops and for stock. So strongly have they become attached to this system that many of the best and most wealthy farmers, especially in the early history of agriculture in this State, have made themselves bankrupt by an endeavor to keep their lands well fenced. It is certainly a great convenience to the general farmer who wishes to devote some of his land to grain, some to meadow, some to orchard and vineyard, and some to stock; in short, who purposes to follow the only safe and rational system of farming—a diversity of crops and a rotation of these—to have his land fenced off into fields; but we doubt its practicability in this country, unless some substitute can be found for redwood posts and pine boughs.

THE OSAGE ORANGE.

Many of the Western Atlantic States have been, and are still to some extent, laboring under the same difficulty in this respect that we are. Many of those States have of late years adopted the system of live or hedge fences, and have found it to possess many advantages over the old system. In the first place a good osage orange hedge fence, the kind most universally adopted, is much cheaper than a rail or board fence, taking into consideration the first cost only. In the next place it costs much less to keep a hedge fence in order and repair than it does either of the other kinds named, and while the latter will last but a few years the former will last a life time and even much longer. The hedge fence on the open, treeless plains, may, after once being fairly and properly started, be allowed to grow up to a considerable hight, and thus become a good break-wind and shelter for growing crops or stock.

To show how popular these fences are becoming in Illinois, for instance, we will state a fact which has been lately brought to our notice. The first osage orange hedge plants were introduced into that State about twenty years since, and for the first three years there were not sold, in the whole State, over five hundred thousand; while in the year eighteen hundred and sixty-eight there were sold and set out into hedges in that State over two hundred and fifty millions of these plants.

It would be well for farmers to look into this question of growing live fences, in this State, very generally. These fences must be generally adopted, or we must abandon the system of fencing our farms altogether. Lumber is becoming too scarce and dear for fencing material. Wherever the osage orange has been tried, even on the driest of our plains, in Solano County, they have given general satisfaction. There are a number of our nurserymen now engaged in cultivating the plants annually for sale; the principal ones in this part of the State being Fraser & Fisher, of Solano County, and Robert Williamson, of Sacramento.

HOW TO PROPAGATE THE OSAGE ORANGE FROM SEED.

Prepare the ground thoroughly by plowing or spading, and pulverise it finely with harrow or rake. To sprout the seed, put it in a vessel and cover with warm, not hot, water. Keep the vessel in a warm place, and change the water once a day. Let the seed soak from five to ten days, after which pour off the water and cover the vessel with a damp cloth. Keep in a warm room and stir the seed occasionally; in about one week more they will begin to sprout and are ready for planting.

There are a little over eleven thousand seeds in a quart, and it is safe to calculate that a quart will produce five thousand plants, if it is properly managed. The seed should be planted, in this State, in March or April, according to the season, and in drills eighteen or twenty inches apart, with twelve good seeds to the foot in the drills. If the season should prove very dry, and the seed are not on very moist soil, they will want some irrigation; but if on sandy and moist soil, they will probably not need it. If the weeds grow freely it may become necessary to hand-weed the rows before the plants will show themselves, as they are very delicate and tender until they get three or four inches high, and require careful culture and a clear entrance into light. When once fairly out of the ground, they will become hard and strong in a few days.

The rows will now require to be cleaned once or twice a month with

a cultivator and hoe until the weeds cease to grow. The plants in good soil will make an average growth of from three to four feet the first season. The next Spring, or when one year old, they should be transplanted in the hedge and cultivated as directed below.

COST OF SETTING AND CULTIVATING THE PLANTS.

We are informed that plenty of one year old plants can be obtained now for ten dollars per thousand, or enough to make a mile of hedge for ninety dollars. It will cost about twenty dollars per mile to prepare the soil and the plants, and about fifty dollars to keep in order and cultivate them till they are three years old. At this age the hedge will turn stock if it has been well cared for and cultivated. This is certainly the cheapest fence that can be made in this country by over fifty per cent; and when once built, as we remarked before, it will last a life time; while it is well known by every farmer that board fences go to decay here, under the influence of our extremely wet and dry seasons, more rapidly than in almost any other country. For the benefit of those who may desire to set out hedge fences we give the following directions:

PREPARATION OF GROUND.

The osage orange is a very hardy and rapid growing shrub or tree. It is classed, scientifically, with the mulberry, and in many respects is very similar to that plant or tree. It will grow well in most any climate, and will stand great extremes of drought and wet. The usual age for transplanting the plants from the nursery to the hedge is one year. The ground on which they are to be planted should be well and deeply plowed the season before the plants are to be set in it to the width of from eight to ten feet. Then plowed again and subsoiled before planting so as to be completely pulverized.

SETTING THE PLANTS.

The plants should be carefully taken from the nursery, without injuring the roots, and the tops cut off, say three inches above the roots. A deep furrow having been plowed on a line where the plants are to be set, stretch a cord, with knots tied in it every six inches; then sort the plants into classes so that those of a uniform size may be set together. Set a plant at each knot in the cord, pressing the fine dirt compactly about the roots, and leaving about an inch of the stem above the soil. Then cultivate thoroughly, keeping the soil well stirred and weeds down for two or three Summers, allowing the plants to grow naturally without pruning.

PLASHING.

If the hedge is set in a very rich and deep soil, and grows rapidly, it should be "plashed" the second Spring from planting; but if it does not grow so rapidly, this operation should be delayed until the third Spring; or perhaps a better rule would be, not to plash until the hedge will average six feet high.

The old system of cutting back every year to within a few inches of the previous year's cutting, in order to make a thick growth from the ground up, has been abandoned by the best hedge growers, and the

plashing system, to obtain the same object, has been found much better and more effectual, and it is attended with much less labor.

To plash the hedge, begin at one end and cut the first plant half off, on the side towards the next plant and close to the ground, and bind it down to the ground in a line with the hedge, and *from* the next plant. Cut the next in the same way and lay it down in like manner on the first, and so on, twining the branches together so as to keep each plant laid down as near in a horizontal position as possible. Each stump and each body thus laid down will throw out shoots all along the hedge, making a perfect network of canes and thorns from the ground up, so thick that no bird, rabbit, or large animal can get through.

Having thus laid the foundation, the hedge can be trimmed and kept in such shape thereafter as the fancy or interest of the owner may suggest. After cutting and trimming it back until formed into as strong and good shaped hedge as may be desired, it will do no harm to allow it to grow up pretty high, and thus answer as a wind-breaker and a fence at the same time.

OSAGE ORANGE HEDGES FOR OVERFLOWED LANDS.

The tenacity with which this plant adheres to life, and its ability, like the willow, to stand without injury long continued overflows, leads the writer to believe that it may be used for making fences in the tule lands of the State; of course, the land for some distance on each side of such hedges will have to be plowed and kept clear from tules, so as to prevent fires from destroying them, when the tules are dry and liable to burn.

The writer intends to test this question by experiment this season, and hopes that others may do the same; for if the idea is practical, it is worth a great deal of money to those owning land bordering and extending into the tule.

No other fence can be made in these lands of a permanent and reliable character, as the water will wash out the posts and float the fence away.

METEOROLOGICAL REPORT.

By THOMAS M. LOGAN, M. D., Meteorologist to the State Board of Agriculture.

In presenting his usual report, the Meteorologist takes occasion to congratulate the Board upon the propitious season at hand. Although at the present writing the rains are far from being over, still an ample supply has already fallen to insure an abundant harvest and a prosperous year. It is to be regretted that the requisition for the printing at this time precludes the possibility of furnishing as completely as is desirable the tables herewith presented. It was our design to compile a full record of all the different points in the State where observations have been made the present year. This must, however, be deferred to another year, when, it is to be hoped, that with the steps that have been taken to procure more extended benefit from the "Signal Service," our branch of the agricultural department will be rendered more beneficial, and the husbandman will be enabled to operate with certainty in the field, or prepare himself for the storm which heralds itself by the telegraph. Should the bill which has been introduced into the Senate, providing for meteorological observations in every county, become a law, we will then be possessed of the much needed information for determining the relative value of different topographical districts, and the amount of water necessary to be supplied by artificial means in average seasons.

The Central Pacific Railroad Company have shown much public spirit in this respect. From information collected by them and printed in the report of the State Board of Health we compile the following table of the inches of rain at various points from August, eighteen hundred and seventy, to July, eighteen hundred and seventy-one:

PLACES.	Elevation in feet.	Inches of rain.....
Summit	7,017	34.50
Cisco	5,939	33.00
Emigrant Gap	5,230	31.50
Alta	3,612	28.00
Colfax	2,421	31.00
Auburn	1,363	17.50
Rocklin	249	10.00
Chico	150	17.75
Marysville	150	6.75
Sacramento	54	8.50
Stockton	40	4.75
Modesto	75	2.25

In the rapid decrease of the rainfall which is observed as we descend from the Summit to Modesto, there are two decided interruptions; one at Alta, and the other at Chico. As a general rule, the higher the mountains against which the raineloud are blown from the ocean, the more rain is precipitated on their western slope, while on the eastern side, in the short distance between the Summit and Reno, at an elevation of four thousand five hundred and twenty-five feet, where the rainfall was one foot two and a quarter inches, we find a much more abrupt decrease, amounting to about thirty-two inches. The difference of eleven inches between Chico and Marysville, at the same elevation, in the same large open valley, only forty-five miles apart, and about the same distance from the ocean, is very remarkable, and can only be accounted for by the relative position of the Buttes to the latter place. It will be noticed that from Rocklin to Alta, on the foothills, sufficient rain for all agricultural purposes fell this year (eighteen hundred and seventy), which was a year of comparative drought. The farmers of the valleys were dried out then, while in many places they were almost drowned out by the floods of this year. From these drawbacks, as well as from that of frost, the foothills are almost free. Crops, particularly grapes, are always certain, let the rainfall be ever so short elsewhere.

We are indebted to Chief Engineer Montague, of the Central Pacific Railroad, for the following additional statistics, published in the *San Francisco Bulletin*, of the rainfall at the various stations of the Central Pacific, California Pacific, San Francisco and North Pacific, California and Oregon, and San Joaquin Valley (branch Central Pacific) Railroads, in the years eighteen hundred and seventy and eighteen hundred and seventy-one. These statistics will be found of great value to stock raisers and agriculturists, indicating as they do the localities where moisture is scarce or plenty.

STATIONS.	1870.	1871.
Central Pacific Railroad.		
San Francisco		
Niles	14.47	23.12
*Livermore		18.13
Ellis	2.05	17.80
Stockton		13.12
Sacramento	4.53	15.62
Rocklin	6.02	18.26
Auburn	10.07	20.53
Colfax	15.58	33.94
Alta (report for December, 1871, wanting)	21.33	37.16
Emigrant Gap (instruments burned in August, 1871; no report since)	31.49	14.08
Cisco	22.48	20.35
Summit	25.81	56.69
*Truckee	31.90	60.29
*Boca	17.69	30.84
*Reno	7.73	16.87
Wadsworth	1.79	4.56
Hot Springs	3.27	4.04
*Brown's	6.32	5.41
*Humboldt	1.61	4.65
*Winnemucca	7.16	10.94
Iron Point	6.26	6.71
*Battle Mountain	9.57	5.64
*Beowawe	2.13	4.01
Carlin	1.98	4.24
Elko	2.21	5.57
Halleck	4.96	5.22
Wells	7.35	7.51
Cedar	9.55	9.44
*Toano		3.45
*Tenace	4.15	4.66
*Promontory	1.53	3.37
Corinne	12.52	15.81
Ogden	7.59	14.39
	5.22	9.46
California and Oregon Branch.		
Marysville		13.17
Chico		22.58
Tehama (no report for November and December, 1871)		6.74
Miller's Ranch		14.30
San Joaquin Valley Branch.		
Modesto		7.98
Chowchilla		9.60
California Pacific.		
Davisville (only established November 1, 1871; two months report only)		12.75

STATIONS.	1870.	1871.
Fairfield (only established November 1, 1871; two months report only)		18.51
San Francisco and Northern Pacific Railroad.		
Petaluma (only established November 1, 1871; two months report only)		15.60
Healdsburg (only established November 1, 1871; two months report only)		23.16

The reports for eighteen hundred and seventy (with the exception of San Francisco and Sacramento) are for the last eleven months only. In regions where snow fell the snow was reduced to a rain basis. Where asterisks are attached, one or more month's reports were mislaid or are wanting.

Nearly all of the railroad stations between Reno and Promontory are on plains, and the rainfall is generally at least one half lighter at them than on the adjacent mountains and valleys.

A more perfect idea of the different climatic elements of certain localities may be obtained from this comparative table of meteorological results in twenty-seven stations in the Pacific States:

STATIONS.	Altitude above the sea, in feet.....	Latitude.....	Longitude.....	TEMPERATURE.				Annual fall of rain and snow, in inches.....
				Hottest mean day	Coldest mean day	Range.....	Mean.....	
		° ′	° ′	°	°	°	° ′	
Fort Yuma	120	32.43	114.36	92.0	56.0	36.0	74.00	3.24
San Diego	150	32.42	117.14	74.0	52.0	22.0	62.00	10.43
Monterey	140	36.36	121.52	59.0	50.0	09.0	55.00	12.20
Fort Miller	402	37.00	119.40	90.0	47.0	43.0	66.00	24.51
San Francisco	22	37.48	122.27	78.0	37.0	41.0	56.40	23.50
Benicia	183	38.08	120.14	80.0	44.0	36.0	59.12	22.86
Sacramento	54	38.31	121.29	94.0	32.0	62.0	60.25	20.06
Marysville	76	39.12	121.42	90.0	38.0	52.0	63.32	
Fort Reading	674	40.31	122.05	83.0	44.0	39.0	62.09	29.02
Aurora	7,468	38.19	119.00	82.0	20.0	62.0	52.00	
Hope Valley	7,088	38.47	119.54	61.0	11.0	40.0	40.00	
Strawberry Valley	5,710	38.49	120.07	69.0	24.0	35.0	51.00	
Fort Jones	2,570	41.36	122.52	71.0	31.0	40.0	51.40	16.77
Astoria	50	46.11	123.48	62.0	39.0	23.0	50.20	86.35
Port Orford	50	42.44	124.29	61.0	46.0	15.0	53.62	71.63
Red Dog (Nevada Co.)	2,900	39.18	120.47					83.30
Nevada	2,630	39.18	120.52	72.0	45.0	27.0	55.75	
Shingle Springs (El Dorado Co.)	1,450							50.30
Vacaville (Solano Co.)		38.20	122.00	86.0	37.0	49.0	53.25	24.18
Stockton	23	37.37	121.14	91.0	41.0	50.0	66.03	4.75
Niles	87	37.15	121.52	72.0	41.3	30.7	56.06	7.45
Livermore	485	37.27	121.26	86.7	39.0	47.7	62.89	6.20
Chico	150	39.46	121.50	92.3	37.0	55.3	64.67	17.65
Auburn	1,363	38.57	121.02	91.0	34.3	56.7	62.75	17.55
Colfax	2,421	39.03	120.55	91.7	33.3	58.4	62.66	30.80
Reno	4,507	39.31	119.49	82.0	18.0	64.0	50.00	2.31
Santa Barbara	300	34.31	119.38	92.0	42.0	50.0	60.20	15.00

The following complete tables of the rainfall at San Francisco and Sacramento since the American settlement of the State, being representative points of the coast and interior valley climates, are worthy of close study and attention. There appears to be one fact of much value established thereby, viz: that there is a general correspondence between the amount of rain falling before the first of January of each season, and the amount which falls afterwards. Thus, if the rainfall is below the average, as for instance in eighteen hundred and sixty-three and eighteen hundred and sixty-four, before the first of January, it will prove deficient afterwards; and on the other hand, if excessive before the first of January, as in eighteen hundred and sixty-seven and eighteen hundred and sixty-eight, it will maintain the same proportion subsequently. Basing our calculations on this standard, we may then expect, according to the above data, at least six inches more of rain during the balance of the present season, which will bring up the total to twenty-four and a half or twenty-five inches. Our agricultural friends will make a note of this, and regulate their operations accordingly.

RAIN TABLE FOR SACRAMENTO.

Prepared by T. M. LOGAN, M. D., Permanent Secretary of State Board of Health.

Arranged according to the seasons, showing the amount in inches of each month during twenty-three years, and for each rainy season; also the mean quantity for every month, and the mean annual amount of rain.

MONTHS.	1849.....	1850.....	1851.....	1852.....	1853.....	1854.....	1855.....	1856.....	1857.....	1858.....	1859.....	1860.....
September	0.250	0.000	1.000	0.003	0.000	sprinkle	sprinkle	sprinkle	0.000	sprinkle	0.025	0.063
October	1.500	0.000	0.180	0.000	0.005	1.010	0.000	0.195	0.655	3.010	0.000	0.914
November	2.250	sprinkle	2.140	6.000	1.500	0.650	0.750	0.651	2.406	0.147	6.485	0.181
December	12.500	sprinkle	7.070	13.410	1.540	1.150	2.000	2.396	6.632	4.329	1.834	4.282
	1850.....	1851.....	1852.....	1853.....	1854.....	1855.....	1856.....	1857.....	1858.....	1859.....	1860.....	1861.....
January	4.500	0.650	0.580	3.000	3.250	2.670	4.919	1.375	2.444	0.964	2.310	2.668
February	0.500	0.350	0.120	2.000	8.500	3.460	0.692	4.801	2.461	3.906	0.931	2.920
March	10.000	1.880	6.400	7.000	3.250	4.200	1.403	0.675	2.878	1.637	5.110	3.320
April	4.250	1.140	0.190	3.500	1.500	4.320	2.132	sprinkle	1.214	0.981	2.874	0.475
May	0.250	0.690	0.300	1.450	0.210	1.150	1.841	sprinkle	0.263	1.037	2.491	0.590
June	0.000	0.000	0.000	0.001	0.310	0.010	0.033	0.350	0.098	0.000	0.017	0.135
July	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.030	0.549	0.000
August	0.000	0.000	0.000	0.000	sprinkle	0.000	0.000	sprinkle	sprinkle	0.000	0.000	0.000
Total	36.000	4.710	17.980	36.365	20.065	18.620	13.770	10.443	18.991	16.041	22,626	15.548

RAIN TABLE FOR SACRAMENTO—Continued.

MONTHS.	1861.....	1862.....	1863.....	1864.....	1865.....	1866.....	1867.....	1868.....	1869.....	1870.....	1871.....	Mean....
September	0.000	0.000	0.003	0.004	0.080	0.000	0.006	0.000	sprinkle	0.000	0.001	0.062
October	sprinkle	0.355	0.060	0.120	0.480	0.001	0.000	0.000	2.120	0.020	0.210	0.469
November	2.170	0.005	1.490	6.718	2.427	2.426	3.806	0.774	0.850	0.584	1.220	1.982
December	8.637	2.327	1.815	7.867	0.364	9.511	12.850	2.612	1.962	0.971	10.990	5.067
	1862.....	1863.....	1864.....	1865.....	1866.....	1867.....	1868.....	1869.....	1870.....	1871.....	1872.....	
January	15.036	1.733	1.077	4.776	7.699	3.440	6.036	4.790	1.371	2.075	4.040	3.518
February	4.260	2.751	0.186	0.712	2.010	7.104	3.147	3.630	3.236	1.919		2.700
March	2.800	2.360	1.303	0.481	2.018	1.010	4.348	2.942	1.642	0.690		3.058
April	0.821	1.693	1.080	1.370	0.476	1.805	2.306	1.240	2.120	1.454		1.679
May	1.808	0.355	0.742	0.460	2.252	0.008	0.270	0.648	0.270	0.756		0.808
June	0.011	0.000	0.087	0.000	0.100	0.000	sprinkle	0.008	sprinkle	0.001		0.053
July	0.000	0.000	0.000	0.004	0.018	0.000	0.000	0.000	sprinkle	0.000		0.027
August	0.006	0.000	0.085	0.000	0.000	0.000	0.000	0.000	0.001	0.000		0.004
Total	35.549	11.579	7.868	22.512	17.924	25.305	32.769	16.644	13,572	8.470		

Maximum quantity of rain in each month, minimum in each month, and average quantity in each month, at Sacramento, since 1849.

	January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November	December.
Maximum	15.0 (1862)	8.5 (1854)	10.0 (1849)	4.3 (1855)	2.5 (1860)	0.4 (1857)	0.5 (1860)	0.0	1.0 (1851)	3.0 (1858)	6.7 (1854)	13.4 (1852)
Minimum	0.6 (1852)	0.1 (1852)	0.5 (1865)	0.0 (1857)	0.0 (1857)	0.0	0.0	0.0	0.0	0.0	0.0 (1850)	0.0 (1850)
Mean	3.5	2.7	3.0	1.6	0.8	0.0	0.0	0.0	0.0	0.4	1.9	5.4

RAIN TABLE FOR SAN FRANCISCO.

Prepared by THOMAS TENNENT.

MONTHS.	1849.		1850.		1851.		1852.		1853.		1854.		1855.		1856.		1857.		1858.		1859.	
	Quantity	Days	Quantity	Days	Quantity	Days	Quantity	Days	Quantity	Days	Quantity	Days	Quantity	Days	Quantity	Days	Quantity	Days	Quantity	Days	Quantity	Days
July															.02	1			.05	2		
August									.04	1	.01	1					.05	2	.16	2	.02	1
September					1.03	1			.46	4	.15	3			.07	2					.03	1
October	3.14	3			.21	2	.80	1	.12	2	2.41	9			.45	5	.93	3	2.74	4	.05	1
November	8.66	8	1.25	6	2.12	5	5.31	12	2.28	12	.34	2	.67	7	2.79	9	3.01	11	.69	5	7.28	15
December	6.20	12	1.05	4	7.10	14	13.20	20	2.32	11	.81	3	5.76	15	3.75	12	4.14	8	6.14	14	1.57	6
	1850.		1851.		1852.		1853.		1854.		1855.		1856.		1857.		1858.		1859.		1860.	
January	8.34	15	0.72	5	.58	4	3.92	11	3.88	10	3.67	11	9.40	13	2.45	7	4.36	8	1.28	4	1.64	8
February	1.77	5	0.54	4	.14	4	1.42	5	8.04	16	4.77	10	.50	4	8.59	15	1.83	8	6.32	18	1.60	7
March	4.53	7	1.94	9	6.68	14	4.86	6	3.51	11	4.64	12	1.60	5	1.62	6	5.55	8	3.02	11	3.99	13
April	0.46	3	1.23	8	.26	3	5.37	8	3.12	9	5.60	10	2.94	6			1.55	4	.27	4	3.14	8
May			0.67	3	.32	1	.38	7	.02	1	1.88	6	.76	3	.02	3	.34	3	1.55	4	2.86	11
June									.08	2			.03	1	.12	1	.05	1			.09	2
Total	33.10	53	7.40	39	18.44	48	35.26	70	23.87	79	23.68	67	21.66	54	19.81	61	21.88	56	22.22	68	22.27	73

RAIN TABLE FOR SAN FRANCISCO—Continued.

MONTHS.	1860.		1861.		1862.		1863.		1864.		1865.		1866.		1867.		1868.		1869.		1870.	
	Quantity.....	Days.....	Quantity.....	Days.....	Quantity.....	Days.....	Quantity.....	Days.....	Quantity.....	Days.....	Quantity.....	Days.....	Quantity.....	Days.....	Quantity.....	Days.....	Quantity.....	Days.....	Quantity.....	Days.....	Quantity.....	Days.....
July	.21	1																				
August									.21	3												
September			.02	1			.03	1	.01	1	.24	2	.11	2	.04	1						
October	.91	12			.40	2			.13	3	.26	4			.20	1	.15	3	.12	1	.03	1
November	.58	3	4.10	12	.15	3	2.55	5	6.68	8	4.19	10	3.35	12	3.41	6	1.18	5	1.29	2		
December	6.17	21	9.54	16	2.35	9	1.80	8	8.91	18	.58	8	15.16	18	10.69	18	4.34	11	1.19	5	.43	4
	1861.		1862.		1863.		1864.		1865.		1866.		1867.		1868.		1869.		1870.		1871.	
January	2.47	8	24.36	18	3.63	9	1.83	5	5.14	9	10.88	16	5.16	15	9.50	17	6.35	14	3.89	9	3.07	7
February	3.72	8	7.53	10	3.19	10			1.34	8	2.12	9	7.20	9	6.13	9	3.90	5	4.78	9	3.76	10
March	4.08	8	2.20	11	2.66	8	1.52	9	.74	4	3.04	12	1.58	7	6.30	12	3.14	12	2.00	8	1.29	8
April	.51	4	.73	9	1.61	9	1.57	4	.94	3	.12	1	2.36	8	2.31	9	2.19	5	1.53	4	1.93	5
May	1.00	3	.74	5	.23	2	.78	5	.63	2	1.46	6			.03	2	.08	2	.20	2	.21	3
June	.08	2	.05	1							.04	1			.23	3	.02	1				
Total	19.72	70	49.27	83	13.62	52	10.08	37	24.73	59	22.93	69	34.92	71	38.84	78	21.35	58	19.31	47	14.10	46

Average rainfall from the season of 1849-50 to that of 1870-71—twenty-two seasons—23.5 inches.

CENSUS STATISTICS.

CENSUS STATISTICS FOR 1870.

OFFICE UNITED STATES MARSHAL
FOR THE DISTRICT OF CALIFORNIA,
SAN FRANCISCO, December 28, 1871.

HON. I. N. HOAG, *Corresponding Secretary State Board of Agriculture, Sacramento:*

DEAR SIR: In pursuance with your request, I have the honor to forward for publication in your annual report some statistics collated from the late enumeration of the State, prepared under my immediate direction, by my Chief Assistant and Deputy of Statistics, H. C. Bennett, Esquire. It will be observed that the table will be useful for reference.

It is not my purpose now to elaborate at any length upon the agricultural resources of California, or comment to any great extent upon the following figures. Mr. Bennett and myself have now in course of preparation for the press a volume embracing the salient points of the census of eighteen hundred and seventy, wherein our agricultural interests will receive the merit they deserve.

In explanation of the wine product for the year eighteen hundred and seventy, as given in the accompanying table, it is necessary to state that the quantity therein referred to includes only that made by farmers and vinegrowers who make wine on their farms or vineyards. The wine made by those who purchase grapes or crude materials is entered under the head of "Manufactures," as is also spirits made from grape juice. By comparing the quantity of wine made by manufacturers and the quantity of spirits made from grape juice, it will be found that the total quantity of wine made during eighteen hundred and seventy exceeded three million gallons. In addition to the various products enumerated in the table the following items also properly belong to the agricultural products of the State for eighteen hundred and seventy:

Fresno County produced nearly four tons of cotton. San Diego also produced thirty bales, raised by Jonas George.

Yuba produced broom corn to the value of five thousand seven hundred and sixty dollars; Sutter, of the same crop, raised twenty thousand dollars' worth, and Amador twelve thousand dollars; small quantities were also produced in other localities. The value of the broom corn for the year exceeded forty-five thousand dollars.

Yuba County produced nearly six hundred thousand pounds of castor beans, and several other counties produced smaller quantities, the aggregate reaching above seven hundred thousand pounds, valued at four cents per pound, equal to twenty-eight thousand dollars.

Yolo County raised one hundred and thirty-five tons of chicory, valued at twenty thousand dollars; and San Joaquin produced an additional amount—at least five thousand dollars.

Monterey produced one hundred tons of sorghum sugar cane, valued at eighteen hundred dollars.

In Santa Barbara County was gathered nearly forty thousand dollars' worth of wild mustard, whilst several other of the southern counties yielded considerable quantities; and it is estimated the aggregate value of this crop alone reached the astounding figures of sixty thousand dollars.

Monterey County produced twelve thousand seven hundred and forty bushels of English mustard seed, valued at nearly twenty thousand dollars.

Mariposa produced two thousand pounds of mohair from two thousand five hundred Angora goats.

It may be safely estimated that the aggregate value of the marketable crops of all descriptions of agricultural products during eighteen hundred and seventy exceeded the sum of sixty million dollars. This valuation is not based on export values, but on the prices paid to producers.

For instance, the value of the fruits sold, according to the table, was only one million three hundred and ten thousand two hundred and seventeen dollars; but before the fruit reached the consumer the value had more than quadrupled by expenses of transportation, packages, dealers' profits, and agents' commissions.

The statistics given in the table pertaining to the County of Napa are only partial; circumstances beyond the control of the undersigned prevented full justice being done in the enumeration of that county.

Very respectfully, your obedient servant,

WM. GOUVERNEUR MORRIS,
United States Marshal.

THE AGRICULTURAL RESOURCES OF CALIFORNIA.

According to the United States Census for 1870. *By* WILLIAM GOUVERNEUR MORRIS, *U. S. Marshal.* H. C. BENNETT, *Compiler.*

COUNTIES.	No. of Farms.....	LAND.			Value of Farms...	Value of implements.....
		Improved.	Wood.	Unimp'ved.		
		Acres.	Acres.	Acres.		
Alameda	961	185,614	625	36,758	$17,742,570	$201,490
Alpine	58	12,365	1,180	37,114	171,150	7,790
Amador	242	35,109	2,640	18,142	465,900	46,015
Butte	531	166,458	4,967	26,701	2,419,650	104,795
Calaveras	394	40,998	13,642	26,231	221,045	25,340
Colusa	428	222,407	29,795	228,415	4,288,364	142,563
Contra Costa	968	279,690	6,140	17,417	5,008,935	199,630
Del Norte	77	10,056	3,990	7,965	166,450	7,795
El Dorado	712	43,547	30,019	27,076	668,585	24,927
Fresno	181	12,506	30,941	91,775	627,405	91,980
Humboldt	477	80,535	10,307	20,923	1,106,455	55,123
Inyo	77	5,520		7,918	146,180	22,550
Kern	86	9,120	310	244,070	337,850	14,675
Klamath	84	3,379	4,059	5,668	72,475	2,855
Lake	302	17,823	619	110,332	706,250	44,631
Lassen	219	36,823	100	7,992	327,600	27,020
Los Angeles	636	200,993		349,458	3,187,410	66,690
Marin	434	247,581	7,197	22,748	5,417,588	332,515
Mariposa	170	22,905	45,355	15,679	350,400	14,300
Mendocino	481	61,435	14,730	85,605	1,366,643	67,525

Merced	157	474,755	4,138	82,518	2,247,400	70,700
Mono	55	9,290	2,500	11,770	82,000	13,781
Monterey	917	150,677	11,196	661,157	4,891,944	236,261
Napa	282	48,007	1,572	48,480	1,984,190	42,085
Nevada	190	8,026	21,053	8,491	500,750	40,335
Placer	322	70,865	7,283	64,461	991,000	54,160
Plumas	270	66,131	2,160	100	491,830	43,675
Sacramento	1,224	296,578		116,051	5,203,740	219,045
San Bernardino	90	7,129	860	14,504	312,200	12,770
San Francisco	109	3,763		3,786	6,248,000	27,690
San Diego	234	10,257	503	254,162	664,750	23,457
San Joaquin	1,418	437,359		2,410	7,404,891	512,106
San Luis Obispo	329	747,832	6,998	85,188	1,852,848	32,191
San Mateo	447	40,251	14,594	139,072	3,403,016	110,067
Santa Barbara	601	44,286	7,801	1,011,252	5,716,141	104,725
Santa Clara	936	161,405	6,446	128,046	11,940,967	449,604
Santa Cruz	383	38,262	39,911	13,825	1,833,500	37,070
Sierra	89	12,793	2,547	4,270	164,250	14,005
Shasta	181	21,692	6,680	6,973	336,473	31,772
Siskiyou	452	93,707	4,722	29,143	772,805	72,491
Solano	942	352,036	100	11,276	9,885,658	473,420
Sonoma	1,680	335,306	39,136	56,943	9,303,238	418,283
Stanislaus	888	383,383	19,256	139,811	4,197,540	368,142
Sutter	660	192,253	7,338	32,942	1,934,958	120,036
Tehama	345	180,790	2,230	21,568	1,351,965	85,935
Trinity	38	2,266	155	4,430	78,550	9,400
Tulare	367	34,184	1,530	51,156	812,100	92,300
Tuolumne	308	26,770	3,140	13,210	327,400	34,400
Yolo	1,492	303,456	3,837	171,711	9,088,446	298,177
Yuba	451	102,395	28,760	54,038	1,258,102	199,575
Totals	23,375	6,180,768	453,062	4,630,731	$140,075,557	$5,547,467

COUNTIES.	LIVE STOCK.							Value of Live Stock.
	Horses	Mules and Asses	Milk Cows	Work Oxen	Cattle	Sheep	Hogs	
Alameda	8,388	646	3,608	4	4,232	32,286	3,708	$958,443
Alpine	490	15	868	8	1,118	57,165	215	264,700
Amador	1,676	141	1,642	68	2,456	27,180	5,380	284,387
Butte	4,367	335	2,248	80	8,160	76,855	19,044	855,883
Calaveras	1,790	77	2,035	61	1,852	31,934	8,178	332,282
Colusa	5,915	670	2,636	14	19,350	175,953	35,533	1,875,751
Contra Costa	7,702	767	5,281	23	10,291	29,286	8,407	1,006,691
Del Norte	394	37	637	88	883	657	1,359	116,518
El Dorado	2,267	142	4,214	212	5,400	17,938	4,190	475,939
Fresno	3,043	252	1,017	432	14,338	133,851	15,361	690,970
Humboldt	4,268	450	6,044	282	11,603	15,858	10,834	743,001
Inyo	1,514	98	783	110	4,769	521	688	128,273
Kern	1,685	163	628	118	5,627	90,200	753	419,305
Klamath	304	452	378	59	1,546	76	1,102	84,215
Lake	2,287	203	1,965	90	2,518	17,752	12,812	399,610
Lassen	2,035	62	1,699	48	8,082	703	1,581	363,160
Los Angeles	9,032	571	2,214	38	18,823	223,403	5,370	1,091,149
Marin	2,671	115	18,535	244	10,199	2,057	6,606	1,198,486
Mariposa	1,525	187	1,117	127	4,548	21,834	9,191	648,876
Mendocino	4,442	488	3,567	137	7,702	53,291	24,811	670,274
Merced	2,380	670	772	119	48,542	46,625	9,030	1,052,831

Mono	745	36	499	177	2,725	1,601	573	116,545
Monterey	8,140	414	9,537	132	58,729	222,150	15,279	1,984,988
Napa	1,837	327	1,363	96	2,867	6,941	6,204	211,780
Nevada	786	21	1,166	24	1,287	505	1,137	181,520
Placer	1,763	105	1,462	71	2,517	26,631	7,342	332,520
Plumas	1,904	276	3,888	269	8,879	12,043	1,535	632,180
Sacramento	10,198	630	10,800	120	13,291	125,619	15,016	1,761,237
San Bernardino	970	109	625	10	2,488	18,121	1,066	150,480
San Francisco	6,786	108	12,711	3	623	9,173	5,408	1,686,087
San Diego	5,417	734	1,186	821	17,826	13,530	1,489	488,989
San Joaquin	13,026	783	6,906	51	11,768	77,849	27,949	1,591,862
San Luis Obispo	4,296	469	4,825	61	11,944	153,909	3,421	1,068,383
San Mateo	3,823	550	5,315	273	4,520	5,208	5,480	798,078
Santa Barbara	6,442	374	3,673	141	14,055	292,461	4,119	1,400,665
Santa Clara	8,032	278	7,418	392	15,045	11,567	46,947	1,765,871
Santa Cruz	1,724	99	2,187	494	2,589	267	3,425	313,500
Sierra	425	42	846	44	2,298	412	240	107,000
Shasta	1,263	157	1,217	79	2,468	2,754	8,741	225,479
Siskiyou	5,717	867	3,422	199	17,762	21,777	9,052	889,213
Solano	6,852	1,046	4,083	43	8,872	41,900	17,033	1,536,295
Sonoma	11,296	1,109	14,122	397	16,140	61,772	28,358	2,190,444
Stanislaus	10,250	1,119	2,289	17	4,500	109,850	14,551	1,376,243
Sutter	4,043	348	3,372	177	4,053	35,542	10,278	579,954
Tehama	3,983	282	2,557	44	10,598	111,068	20,785	1,016,743
Trinity	176	22	415	30	1,157	130	386	133,908
Tulare	4,599	273	2,182	54	34,374	145,311	15,053	1,200,245
Tuolumne	826	129	2,080	62	1,448	8,900	1,376	227,275
Yolo	9,166	1,314	3,729	48	9,184	72,187	27,409	1,355,537
Yuba	3,551	376	2,915	159	3,782	14,851	15,327	641,796
Totals	206,211	18,938	178,678	6,848	479,828	2,658,554	499,132	$39,825,561

AGRICULTURAL RESOURCES—Continued.

COUNTIES.	GRAIN PRODUCTS OF 1869 AND 1870.					
	WHEAT.	OATS.	BARLEY.	CORN.	RYE.	BU'KWH'T
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Alameda	818,979	64,154	808,175	28,704	46	670
Alpine	1,294	3,113	8,269	308	875	25
Amador	16,678	80	51,915	36,760	310	
Butte	727,547	6,140	340,148	16,490	2,520	
Calaveras	8,341	100	37,345	4,535		
Colusa	700,544	480	395,757	2,330		
Contra Costa	924,736	73,055	334,570	280	40	
Del Norte	8,023	14,955	6,150	505		85
El Dorado	3,210	260	8,542	589	362	
Fresno	18,965		18,875	3,930	305	22
Humboldt	28,287	136,613	32,767	9,902		270
Inyo	13,759	2,175	4,905	22,915	40	50
Kern	13,700	590	26,270	3,575		
Klamath	2,360	1,405	550	2,125	865	
Lake	85,626	3,884	66,362	11,575	850	200
Lassen	12,975	33,857	103,677	205	40	
Los Angeles	4,930	253	118,335	264,175	7,208	200
Marin	57,680	398,744	31,415	320	1,070	680
Mariposa	4,237	590	8,135	455	90	
Mendocino	86,676	119,356	65,355	6,628	88	33
Merced	217,912	750	142,446	14,456		
Mono	4,144	4,173	12,699	325	27	

Monterey	983,239	18,176	639,255	7,431		320
Napa	359,340	3,980	54,790	10,230	1,250	
Nevada	585	190	200	306	80	
Placer	102,392	2,510	57,421	1,000	1,301	
Plumas	15,027	62,709	16,328	190		10
Sacramento	125,852	9,905	662,937	60,310	100	500
San Bernardino	10,181	50	51,906	12,250	20	
San Francisco			500			
San Diego	24,242	264	14,905	10,214	14	
San Joaquin	2,308,935	600	1,067,529	38,555	220	
San Luis Obispo	38,594	780	143,824	28,528	10	
San Mateo	106,549	292,718	175,577	278	620	400
Santa Barbara	19,051	2,095	194,850	145,442		160
Santa Clara	1,155,869	14,329	391,409	27,970	1,540	
Santa Cruz	126,112	46,420	74,321	27,705		815
Sierra	5,304	8,250	10,935		220	
Shasta	29,569	2,227	52,836	2,455	143	12
Siskiyou	111,037	129,108	53,428	4,672	1,147	25
Solano	1,956,234	5,442	462,060	3,750	20	3,060
Sonoma	616,126	334,619	194,087	148,212	5,185	840
Stanislaus	1,681,145		630,100	15,700	900	
Sutter	618,954	3,450	124,714	25,903	850	
Tehama	404,722	3,801	115,412	625		
Trinity	9,898	1,635	735	835	20	
Tulare	53,505		85,010	9,750		
Tuolumne	33,475		16,425			
Yolo	2,061,046	1,320	501,952	2,140		4,100
Yuba	147,657	28,027	286,931	33,345	205	
Totals	16,865,246	1,837,332	8,703,039	1,048,883	28,581	12,477

AGRICULTURAL RESOURCES—Continued.

COUNTIES.	POTATOES.		GRASS SEED.	TOBACCO.	PEAS AND BEANS.	WOOL.	Value of Fruit sold.	Value of Vegetables sold.....	WINE.
	IRISH.	SWEET.							
	Bushels.	Bushels.	Bushels.	Pounds.	Bushels.	Pounds.			Gallons.
Alameda	108,523	3,705			9,070	120,975	$82,826	$160,176	2,785
Alpine	6,105					281,700		985	
Amador	9,890	1,060			16,208	68,500	43,150	11,615	54,123
Butte	2,043	268			615	371,149	34,217	49,450	27,374
Calaveras	6,695	400			4,730	125,110	26,806	25,130	100,260
Colusa	1,708	364	300	1,000	153	1,046,654	4,470	2,066	170
Contra Costa	630				1,430	51,400	15,978	1,550	10,430
Del Norte	20,540				3,471		4,280	1,045	
El Dorado	4,148				151	40,560	61,221	14,584	118,941
Fresno	4,318	1,650		40	165	159,664	850	450	
Humboldt	483,540	140	97	370	54,446	10,290	25,193	2,220	5
Inyo	6,364				695		300	1,550	
Kern	6,050	420			945	281,100	650	1,250	
Klamath	9,382	10			943		2,615	3,778	300
Lake	6,133				278	32,197	6,292	6,568	16
Lassen	6,400					75	375	100	
Los Angeles	16,182	2,990		150	17,314	852,122	4,555	460	273,235
Marin	83,245				150	6,724	4,420	1,050	800
Mariposa	1,542	100		100	217	29,944	5,485	3,160	5,045
Mendocino	75,683			30	206	174,018	3,935	512	500
Merced	13,830	11,320			1,296	203,072	9,596	4,320	10,815
Mono	5,032				150	7,000		3,880	

Monterey	73,590			59,120	125,705	847,705	2,490	1,140	5,200
Napa	2,358				425	18,868	31,928	8,530	56,581
Nevada	5,566				413		30,315	30,370	20,983
Placer	1,768	3,349			260	149,175	33,752	20,695	61,209
Plumas	14,288		83		650	11,949	1,980	1,750	
Sacramento	67,113	149,145			18,320	465,858	166,835	43,290	94,833
San Bernardino	1,542	785			419	80,300	5,235	1,600	48,730
San Francisco	7,500							165,618	
San Diego	2,677	95			554	4,000		4,625	500
San Joaquin	7,195	2,200	500		765	38,920	20,905	9,700	25,720
San Luis Obispo	5,726	550			16,359	752,673	760		
San Mateo	126,225				9,844		1,350	54,050	500
Santa Barbara	31,148	3,109		730	33,250	1,330,930	2,239	4,380	6,050
Santa Clara	31,764	100			10,021	142,200	72,940	109,739	76,150
Santa Cruz	34,688	245			11,384		15,020	5,025	13,750
Sierra	4,370				554	4,000		5,950	700
Shasta	9,748	1,735	44		945	15,820	20,648	15,955	19,287
Siskiyou	25,728	10	36		1,193	19,275	15,440	16,078	825
Solano	3,930	960		1,000	4,495	121,100	126,030	6,665	53,880
Sonoma	367,461	105	76	469	2,616	220,084	150,426	6,874	209,195
Stanislaus	1,750				180	700,663	7,450	3,175	5,140
Sutter	3,512	7,580			5,800	101,281	10,971	6,965	4,045
Tehama	260	350				431,626	10,860	72,650	33,000
Trinity	5,958				388		7,580	9,800	
Tulare	8,600	2,100			150	665,045	11,350	390	5,030
Tuolumne	20,675					26,400	59,920	25,185	128,875
Yolo	20,440	3,920	140		6,467	228,620	40,009	83,479	5,910
Yuba	9,565	1,442			3,074	24,328	127,368	19,714	82,943
Totals	1,773,128	200,207	1,276	63,009	366,664	10,263,074	$1,310,217	$919,271	1,508,835

AGRICULTURAL RESOURCES—Continued.

COUNTIES.	DAIRY PRODUCTS.			HAY.	HOPS.	SORGHUM SYRUP.	SILK COCOONS.	FLAX SEED.	CLOVER SEED.	HEMP.
	BUTTER.	CHEESE.	MILK.							
	Pounds.	Pounds.	Gallons.	Tons.	Pounds.	Galls.	Pounds.	Bushels.	Bushels.	Pounds.
Alameda	189,700	430	193,425	20,640	7,010			500		
Alpine	20,340	50	275	994	5,000					
Amador	43,970	950	1,600	5,894	12,050					
Butte	24,645	3,000	13,500	11,761						
Calaveras	66,246	3,545	3,982	6,195	200					
Colusa	35,852	2,000	36	11,064		3			60	
Contra Costa	154,146	60,950	525	18,664				40		
Del Norte	35,453			599						
El Dorado	220,025	27,891	638	6,213						
Fresno	5,659	1,050	130	1,746						
Humboldt	107,490	850		6,133				405	50	
Inyo	20,940	200	1,700	1,456		200				
Kern	3,150		1,000	1,643						
Klamath	6,405		146	689						
Lake	83,278	63,340	339	5,074						200
Lassen	65,864	1,700		8,835						
Los Angeles	25,881	300		10,864			30		39	
Marin	2,003,314	310,100	58,400	11,892						
Mariposa	9,370		2,050	2,513	20					
Mendocino	57,842	330		8,372	59,400					
Merced	232,530	229,998	199	8,085			60			
Mono	32,885	4,100		2,609						

Monterey	425,385	1,027,355	1,360	20,106	30,000		10	1,408		
Napa	46,240	1,000		6,555						
Nevada	50,491	1,600	50,390	4,684	1,900		167			
Placer	72,125	880	10,725	6,746					96	50
Plumas	237,425		1,975	15,725						
Sacramento	369,635	97,020	133,100	24,463	235,000		200	1,800	590	78,000
San Bernardino	21,510	3,400		1,808	12				70	
San Francisco			2,546,915	1,730						
San Diego	9,678	1,100	100	2,339						
San Joaquin	305,868	20,000	161,000	53,586	3,100					
San Luis Obispo	156,335	291,659	18,000	5,573						
San Mateo	286,610	465,695	635,235	18,287	20,000			48,890		
Santa Barbara	160,380	36,150	14,115	7,682	1,800		200	2,725		
Santa Clara	174,391	549,290	126,265	46,060	94,000	130				
Santa Cruz	94,655	120,220	1,400	9,325				1,338		
Sierra	10,078	1,100	100	2,359						
Shasta	30,150	2,190	1,205	5,032	1,000			5		
Siskiyou	101,555	2,000	1,046	12,654						
Solano	118,969	4,000	102,800	36,739	50			1,400		
Sonoma	1,095,679	253,700	63,440	34,258	10,382		5	12		
Stanislaus	53,125		2,190	15,162						
Sutter	111,375		25,550	21,016					44	
Tehama	68,185		8,000	6,434	140					
Trinity	7,320	200	250	740						
Tulare	37,840	200		4,421						
Tuolumne	139,785	400		10,540						
Yolo	194,719	18,750	77,300	27,360	3,200		762		258	
Yuba	99,930	8,280	32,032	14,516	30,060					
Totals	8,024,423	3,306,873	3,292,438	567,835	514,324	333	1,434	58,523	1,207	78,250

AGRICULTURAL RESOURCES—Concluded.

COUNTIES.	HONEY.	WAX.	Value of Forest Products sold....	Value of Farm Manufactures....	Value of Animals sold for Slaughter.....	Wages paid for Labor.....	Value of Crop and Improvements for 1870...
	Pounds.	Pounds.					
Alameda	150				$68,800	$517,619	$2,239,775
Alpine	75				10,042	35,710	165,490
Amador	2,520		$6,215	$26,925	56,621	56,860	275,025
Butte	3,200		2,925	104,850	66,524	279,060	1,442,696
Calaveras	6,550	606	25,019		47,327	61,903	400,345
Colusa	2,671	200	66,022	500	540,499	381,852	1,900,005
Contra Costa	4,887	217	252		41,336	398,670	1,348,106
Del Norte	2,195			25	12,879	17,695	50,092
El Dorado	1,670		29,482	10,450	53,569	95,462	492,618
Fresno	6,150	150			81,443	87,780	214,171
Humboldt	1,430		8,401	5,373	132,056	96,208	544,064
Inyo					32,241	38,880	157,241
Kern	2,400			2,300	53,800	45,210	195,725
Klamath	380	50			14,227	13,475	254,271
Lake	8,945	25	120		66,928	47,744	322,810
Lassen					25,916	44,226	266,300
Los Angeles	75,590	200			44,612	142,160	631,163
Marin			16,165	1,200	148,122	402,020	1,625,166
Mariposa			920	2,920	41,747	31,750	137,500
Mendocino					144,974	77,095	593,513
Merced	850	450	1,125	7,220	891,783	174,587	742,669
Mono	50				17,116	25,547	89,272

Monterey	12,557	1,630	2,800	3,000	439,529	508.742	1,668,751
Napa	500	30	9,720	764	53,359	130,234	434,441
Nevada	760	20	65,370	16,955	9,020	54,835	374,505
Placer	5,335	124	26,435	24,990	62,294	119,730	1,191,450
Plumas			1,110		103,965	115,981	377,823
Sacramento	16,485	906	6,465	900	77,078	499,201	1,889,919
San Bernardino	17,880	729	1,600		6,820	21,690	133,140
San Francisco						137,631	729,465
San Diego	818				32,415	53,322	202,424
San Joaquin	5,230		53,375		177,231	741,637	4,487,970
San Luis Obispo	7,035	147			249,915	194,987	759,681
San Mateo	1,050		37,470		101,598	361,941	1,018,560
Santa Barbara	3,915	155	9,185	14,400	135,511	180,222	900,187
Santa Clara	1,920	10	34,310	11,845	166,882	979,264	2,546,715
Santa Cruz	1,025		3,760		49,745	86,580	336,245
Sierra	818				32,778	53,897	205,449
Shasta	10,980	85		155	55,542	38,631	298,697
Siskiyou	6,770	100			75,323	128,870	692,319
Solano	4,390				147,713	547,141	3,015,235
Sonoma	5,176	87	81,486	25,110	325,563	549,865	2,251,265
Stanislaus	6,050		5,025		199,146	789,807	2,611,906
Sutter	700		18,851		53,215	241,192	958,274
Tehama	820	100	7,200		194,075	205,495	920,857
Trinity	100	40		200	12,081	24,272	89,115
Tulare	5,250				298,330	71,850	803,160
Tuolumne	3,900		13,450		26,270	29,650	217,000
Yolo	14,340	150	21,835	1,700	110,281	478,084	3,061,416
Yuba	3,275	159	10,027	753	117,123	233,375	798,717
Totals	260,806	6,371	$566,120	$262,735	$5,905,364	$10,649,639	$46,932,703

POPULATION OF CALIFORNIA, BY COUNTIES.

Official Statement of the Population of the State of California, by Counties, and San Francisco, by Wards, according to the Ninth Census. Furnished, with the compliments of the United States Marshal, to the State Board of Agriculture.

Counties.	Popul'n.	Counties.	Popul'n.
Alameda	24,237	Placer	11,357
Alpine	685	Plumas	4,489
Amador	9,582	Sacramento	26,830
Butte	11,403	San Bernardino	3,988
Calaveras	8,895	San Diego	4,951
Colusa	6,165	San Francisco	149,473
Contra Costa	8,461	San Joaquin	21,050
Del Norte	2,022	San Luis Obispo	4,772
El Dorado	10,309	San Mateo	6,635
Fresno	6,336	Santa Barbara	7,784
Humboldt	6,140	Santa Clara	26,246
Inyo	1,956	Santa Cruz	8,743
Kern	2,925	Shasta	4,173
Klamath	1,674	Sierra	5,619
Lake	2,969	Siskiyou	6,848
Lassen	1,327	Solano	16,871
Los Angeles	15,309	Sonoma	19,819
Marin	6,903	Stanislaus	6,499
Mariposa	4,572	Sutter	5,030
Mendocino	7,545	Tehama	3,587
Merced	2,807	Trinity	3,213
Mono	430	Tulare	4,521
Monterey	9,876	Tuolumne	8,150
Napa	7,163	Yolo	9,899
Nevada	19,134	Yuba	10,851
		Total	560,223

Population of San Francisco, by Wards.

Wards.	Popul'n.	Wards.	Popul'n.
First Ward	10,767	Seventh Ward	10,379
Second Ward	11,831	Eighth Ward	16,503
Third Ward	2,964	Ninth Ward	10,689
Fourth Ward	16,555	Tenth Ward	22,325
Fifth Ward	2,813	Eleventh Ward	22,666
Sixth Ward	9,400	Twelfth Ward	12,581
		Total	149,473

Office U. S. Marshal for the District of California,
San Francisco, January 1st, 1872.

I hereby certify that the foregoing table is a true copy of the official returns of the population of the State of California as furnished me from the office of the Superintendent of Census at Washington.

WILLIAM GOUVERNEUR MORRIS,
United States Marshal.

STATISTICAL TABLES FOR 1870-71.

AS REPORTED TO THE SECRETARY OF THE STATE BOARD OF AGRICULTURE BY THE STATE SURVEYOR GENERAL.

TABLE OF STATISTICS FOR 1870–71.

Industrial and other statistical information for the years 1870–71, *as reported to the Surveyor General by the several County Assessors, embracing the entire State, with the exception of the Counties of Butte, Marin, and Shasta, which have not sent in their reports.*

COUNTIES.	Acres of Land Inclosed.....	Acres of Land Cultivated.....	WHEAT.		BARLEY.		Acres of Land Cultivated in 1871.....	Acres Wheat sown in 1871.	Acres of Barley sown in 1871.....
			Acres ...	Bushels..	Acres ...	Bushels..			
Alameda	92,716	121,240	58,712	983,946	39,210	613,940	121,240	53,540	42,500
Alpine	20,000	2,030	30	600	100	2,500	2,030	30	100
Amador	62,340	17,060	2,300	35,400	2,300	44,300	15,371	2,040	2,170
Butte									
Calaveras.....	46,009	13,600	775	6,215	1,300	1,730	1,668	300	1,368
Colusa.....	200,000	86,000	50,000	750,000	25,000	500,000			
Contra Costa.....	125,620	79,810	51,155	750,940	154,020	340,360	69,790	51,140	15,400
Del Norte.....	10,320	2,479	301	5,740	124	3,990	1,975	256	276
El Dorado.....	87,581	14,932	790	832	271	2,846	14,834	820	265
Fresno	63,145	11,925	5,180	28,050	4,610	39,540	15,340	7,420	6,585
Humboldt.....	42,820	13,855	1,232	37,967	740	29,410	14,240	1,265	650
Inyo	26,050	4,500	600	25,000	800	30,000	5,000	700	950
Kern	7,000	5,000	1,300	40,000	2,000	50,000	5,000	1,300	2,000
Klamath	6,000	2,500	200	5,000	300	4,000			
Lake.....	41,590	10,342	4,880	96,088	2,769	63,545	12,427	5,591	3,068
Lassen	22,676	7,042	713	12,167	3,588	82,934	7,067	858	4,226
Los Angeles.....	27,300	45,700	300	9,000	9,700	291,000	44,000	300	12,000
Marin									
Mariposa	25,100	6,000	800	5,000	2,035	6,000			
Mendocino.....	250,000	180,000	30,700	431,000	10,000	200,000	249,000	31,000	9,000

Merced	250,000	300,600	200,000	1,000,000	100,000	800,000	300,000	200,000	100,000
Mono	5,160	1,480	312	3,980	674	15,600	1,560	356	710
Monterey	218,573	109,354	68,327	1,093,400	34,412	929,084	117,075	54,210	48,378
Napa	105,500	40,705	33,900	576,300	3,720	81,840	40,490	32,450	3,640
Nevada	46,000	12,600	600		900		12,600	600	700
Placer	85,896	32,735	7,851	101,802	5,183	57,400	33,846		
Plumas	37,565	3,685	880	13,589	746	14,231	3,685	933	811
Sacramento	279,013	70,232	7,114	104,403	32,440	604,403	70,511	13,127	30,903
San Bernardino	21,000	17,600	3,200	24,600	6,700	90,000	17,600	3,000	13,200
San Diego	7,000	4,500	3,000	15,000	1,200	6,000	4,500	3,000	1,200
San Francisco									
San Joaquin	275,000	120,000	70,000	774,200	20,000	305,600	150,000	80,000	20,000
San Luis Obispo	60,000	10,000	3,000	60,000	3,000	60,000	20,000	8,000	8,000
San Mateo	155,000	89,000	17,000	490,000	18,500	580,000	90,000	16,500	17,000
Santa Barbara	50,759	95,838	10,901	9,500	30,968	619,567	65,515	6,000	50,997
Santa Clara	495.273	156,220	98,445	1,225,790	13,670	295,260	165,000	103,500	12,700
Santa Cruz	66,215	23,319	6,360	132,410	4,252	151,205	22,653	4,153	3,211
Shasta									
Sierra	22,310	2,560	945	13,441	860	19,022			
Siskiyou	67,620	46,740	9,840	135,800	2,400	58,200			
Solano	304,921	285,276	134,812	2,089,686	15,869	466,070	341,000	190,000	10,500
Sonoma	460,180	250,585	135,520	2,167,250	17,320	230,927	252,570	138,150	16,350
Stanislaus	75,000	300,400	260,000	1,240,000	45,000	540,000	345,000	275,000	48,000
Sutter	171,967	104,925	45,386	633,295	14,982	404,457	110,151	47,635	15,731
Tehama	130,000	43,500	25,210	609,000	11,000	211,000	122,000	24,176	10,000
Trinity	12,360	4,640	1,000	15,000	120	1,800	3,216	1,000	120
Tulare	33,685	25,000	3,395	23,960	5,000	133,150	26,000	5,589	10,500
Tuolumne	152,500	19,500	550	11,000	500	10,000			
Yolo	136,367	144,041	102,179	1,384,300	33,155	292,460	144,041	102,179	33,155
Yuba	102,810	53,000	9,193	118,483	14,563	286,950	54,500	10,125	11,774
Totals	4,982,942	2,992,050	1,478,891	17,288,534	696,001	9,570,321	3,083,495	1,476,243	568,138

TABLE OF STATISTICS—Continued.

COUNTIES.	OATS.		RYE.		CORN.		BUCKWHEAT.		PEAS.	
	Acres.....	Bushels.....	Acres.....	Bushels.....	Acres.....	Bushels.....	Acres.....	Bushels.....	Acres.....	Bushels.....
Alameda	4,300	110,290	115	2,309	530	12,960	15	210	200	2,600
Alpine	200	4,000	3	50	20	600			4	100
Amador	60	1,600			870	26,300	4	100	2	110
Butte										
Calaveras	19	72	14	158	280	6,980				
Colusa	400	8,000			300	6,000				
Contra Costa	2,000	49,420	700	1,940	190	3,890	20	400	25	490
Del Norte	493	18,520			14	410	5	150	113	3,180
El Dorado	182	1,326	134	1,031	112	2,070				
Fresno	27	744	60	775	667	13,970			4½	130
Humboldt	3,812	228,175	10	500	240	9,742	3	80	1,080	63,540
Inyo	275	850			2,500	7,500	5	100	10	175
Kern	50	1,000	20	300	590	2,360	5	50	3	60
Klamath	200	2,700			100	2,000			50	1,500
Lake	235	5,600	9	95	467	7,837				
Lassen	1,278	34,864	36	734	21	812				
Los Angeles	350		75	2,250	10,200	479,400	70	2,100	57	1,425
Marin										
Mariposa	300		30		50	600			3	100
Mendocino	40,000	2,100,000			250	5,000			200	4,000

Merced	300	9,000			400	12,000				
Mono	208	5,601			8	92				
Monterey	310	9,200	20	500	200	6,150	15	290	200	3,850
Napa	795	23,850	40	400	1,395	41,850			5	110
Nevada	3,400		400	1,000	200		40			
Placer	677	2,490	410	1,457	20	200				
Plumas	1,411	41,775								
Sacramento	1,201	27,656	46	760	2,491	79,405	50	1,536	6	256
San Bernardino					2,600	65,000				
San Diego					300	6,000			10	100
San Francisco										
San Joaquin	2	260	50	400	700	18,200	4	80	10	400
San Luis Obispo					500	16,000			100	4,000
San Mateo	14,800	320,200	50	875	160				240	
Santa Barbara	515	4,058			20,715	347,500			159	400
Santa Clara	3,300	75,800	750	5,275	627	14,670	20	200	155	4,000
Santa Cruz	2,299	93,718	80	1,250	1,174	33,690	35	440		
Shasta										
Sierra	515	11,785	11	250						
Siskiyou	3,200	76,840	17	460	100	3,300	5	114	5	200
Solano	1,840	45,200	146	2,920	1,050	15,169	500	7,500	30	1,500
Sonoma	22,210	360,350	200	3,256	3,580	105,200	7	129	26	1,040
Stanislaus					340	8,900				
Sutter	609	12,371	266	800	914	25,360				
Tehama	120	700			140	2,500			4	40
Trinity	100	1,500			40	1,000				
Tulare	80	730			1,001	15,680				
Tuolumne	200	3,000			110	2,750				
Yolo	25				100	2,850				
Yuba	971	22,230			798	23,420			30	800
Totals	113,269	3,714,480	3,692	29,795	57,364	1,434,317	803	13,479	2,726½	94,106

TABLE OF STATISTICS—Continued.

COUNTIES.	PEANUTS.		BEANS.		CASTOR BEANS.		POTATOES.		SW'T POTATOES.	
	Acres.....	Pounds.....	Acres.....	Bushels.....	Acres.....	Pounds.....	Acres.....	Bushels.....	Acres.....	Bushels.....
Alameda			650	6,430			1,300	81,800		
Alpine			5	150			75	2,500		
Amador			5	270			200	6,030	5	640
Butte										
Calaveras										
Colusa			4	120			30	2,000	10	600
Contra Costa			210	4,200			100	16,960	5	500
Del Norte			3	52			123	15,905		
El Dorado			10	162			182	1,682		
Fresno			11	130			100	47,690	7	1,210
Humboldt			3	91			3,467	1,141,100		
Inyo	1	250	20	175			40	6,000		
Kern	3	3,000	30	1,200			110	5,500	11	660
Klamath			50	1,500			100	3,000		
Lake							20	1,520		
Lassen			3	54			36	4,854		
Los Angeles	89	81,800	1,200	24,000	110	110,000	1,400	120,400	110	8,250
Marin										
Mariposa			5	150			60	2,700		
Mendocino							2,000	80,000		

Merced			50	2,500			50	2,500	30	1,500
Mono			1	20			91	4,476		
Monterey			690	20,620			2,015	141,220		
Napa			6	170			30	3,400		
Nevada							180	3,400		
Placer							113	4,072	122	3,345
Plumas							68	5,085	2	515
Sacramento	10	17,760	406	13,110			752	99,016	673	117,682
San Bernardino			45	1,800			50	5,000	20	1,500
San Diego	2	1,000	100	2,000			75	3,750	10	200
San Francisco										
San Joaquin	1	450	65	1,820			200	1,400	10	1,250
San Luis Obispo			800	8,000			6,000	60,000		
San Mateo			1,200				6,800	640,000		
Santa Barbara			15,607	365,040	125	4,325	1,020	3,905	316	3,059
Santa Clara			850	16,225			1,470	106,500		
Santa Cruz			357	6,214			496	52,018	11½	2,383
Shasta										
Sierra							89	8,410		
Siskiyou	1	400	20	510			600	78,000	2	120
Solano	5	1,680	275	5,500	50		300	12,690	25	725
Sonoma	5	4,200	35	656			4,500	250,000	15	3,000
Stanislaus			13	650						
Sutter	1	709	50	1,660	138	13,000	17	1,209	68	13,090
Tehama	180	42,564	8	800			60	1,005	8	3,176
Trinity			30	500			120	12,000		
Tulare			38	1,037			47	15,600	15	3,000
Tuolumne			250	2,200			210	15,000		
Yolo	40	38,000	312	12,480			105	12,480	45	5,400
Yuba	2	1,500	40	1,000	555	555,000	130	10,400	18	1,600
Totals	340	193,304	23,457	503,201	978	682,325	34,931	3,092,177	1,536½	173,405

TABLE OF STATISTICS—Continued.

COUNTIES.	ONIONS.		HAY.		FLAX.		HOPS.		TOBACCO.		BEETS.
	Acres	Bushels	Acres	Tons	Acres	Pounds	Acres	Pounds	Acres	Pounds	Tons
Alameda	200	22,460	7,000	11,600	320	61,200	9	3,300			1,950
Alpine			1,000	1,000							20
Amador	3	240	4,000	3,340			7	4,300			10
Butte											
Calaveras											2
Colusa	5	250	10,000	10,000							10
Contra Costa	30	3,820	13,900	18,650	3	2,900					2,000
Del Norte	1	40	628	1,199							9
El Dorado			5,223	4,875							
Fresno	4	340	3,640	2,555							30
Humboldt	2	180	2,950	5,967							210
Inyo	10	375	10,000	20,000							5
Kern	12	900	800	1,200				25	1	300	50
Klamath	10	300	1,200	4,800							
Lake	1	155	4,561	6,475							9
Lassen	3½	447	3,514	5,652							26
Los Angeles	73	9,100	2,800	7,700	1		35	19,400	60	45,200	150
Marin											
Mariposa	5	400	6,000	10,000							5
Mendocino			75,000	137,000			150	20,000			

Merced	10	500	2,000	2,500							
Mono	4½	173	1,580	1,940							4
Monterey	350	14,200	450	720	1,250	286,200	78	1,450	44	18,270	45
Napa	3	375	8,115	11,270			14	27,000			100
Nevada	25		8,000	10,000							40
Placer			6,471	6,665							
Plumas	6	240	12,030	12,865							19
Sacramento	171	26,473	25,872	24,716	15	12,000	179	274,400			232
San Bernardino	25	1,250	1,240	2,500							20
San Diego	5	250	300	600							250
San Francisco											
San Joaquin	20	4,240	12,000	8,760			14	8,000			50
San Luis Obispo	10		4,000	8,000							50
San Mateo	80	60,000	15,000	24,000	350						2,000
Santa Barbara	101	800	10,950	25,627	4,000	365,900					619
Santa Clara	975	85,350	15,670	25,340			67	16,950	40	3,300	2,075
Santa Cruz			3,310	6,146	1,112	Seed.	20				30
Shasta											
Sierra			6,820	7,110							7
Siskiyou	12	3,100	68,000	120,000							8
Solano	15	450	14,690	21,345	325	32,500					196
Sonoma	16	2,000	25,250	43,600							3,850
Stanislaus			8,000	7,800							
Sutter	1	40	11,077	12,247							
Tehama	4	950	5,400	6,940							4
Trinity	6	600	1,200	1,800							
Tulare			1,946	2,000							55
Tuolumne	75	7,500	12,000	14,500							
Yolo	18	1,260	13,490	14,745							100
Yuba	20	3,600	12,941	9,700			32	30,000			30
Totals	2,302	252,358	460,018	685,449	7,376	760,700	604	404,825	145	67,070	14,270

TABLE OF STATISTICS—Continued.

COUNTIES.	Tons of turnips	Tons of pumpkins and squashes	COTTON. Acres	COTTON. Pounds	Pounds of silk cocoons	Acres of broomcorn	Pounds of butter	Pounds of cheese	Pounds of wool	Pounds of honey
Alameda	85	2,090					80,410	6,570	230,600	2,960
Alpine	25	30								
Amador		30			130	160	34,300	2,000	14,000	1,400
Butte										
Calaveras	2	18			20		20,110	12,000	513,000	11,200
Colusa		50				50	30,000		1,000,000	25,000
Contra Costa	740	1,600					220,940	41,676	130,260	8,900
Del Norte	27	15					42,600	300	2,850	2,050
El Dorado					30		137,333	16,970	15,729	3,268
Fresno	10	155					20,975	1,300	492,200	11,180
Humboldt	28						73,120	1,256	43,230	2,800
Inyo	3	20					4,000		5,000	300
Kern	50	1,000				3	6,000	1,000	814,586	6,000
Klamath							3,000			478
Lake	23	221					30,896	65,600	56,488	6,245
Lassen	6	47					40,216	3,840	1,568	
Los Angeles	15	3,100			3,300	76	33,200	9,700	1,570,000	168,000
Marin										
Mariposa	12	10					8,000	500	75,000	
Mendocino		1,000					117,600	9,800	274,000	

Merced		400	100				5,000	3,000		500
Mono	7	5					4,190	2,720		
Monterey	30	415					108,780	1,793,800	594,587	82,800
Napa	30	300			100	5	180,000	8,200	25,300	3,800
Nevada	15	25			700	45	7,300	1,200		2,300
Placer		80				10	11,390	938	151,420	7,609
Plumas	9	8					170,950	1,400	10,042	1,685
Sacramento	154	2,202			935	467	229,205	73,300	323,330	12,440
San Bernardino		825				18	28,200	3,250	98,540	21,600
San Diego	75	300					5,600		150,000	4,500
San Francisco										
San Joaquin	20	135			24		200,000	15,000	241,000	2,000
San Luis Obispo	500						500,000	500,000	350,000	
San Mateo		150					210,000	230,000		1,200
Santa Barbara	105	2,850			260		9,056	25,000	1,291,306	10,000
Santa Clara	100	3,290			300		425,300	2,375,440	50,000	6,275
Santa Cruz		2,359			10		60,052	31,366		830
Shasta										
Sierra	18	9					72,300	14,000	1,200	3,100
Siskiyou	34	56					75,580	16,700	56,000	4,000
Solano	47	75					36,721	12,640	221,000	1,025
Sonoma	300	5,000					850,250	200,250	256,832	1,850
Stanislaus							5,000		950,000	19,000
Sutter		442				622	48,963		43,954	180
Tehama	6	10				80	29,000	2,150	992,783	2,460
Trinity		10					15,075			1,500
Tulare	8	195				5	10,525		975,000	18,900
Tuolumne	100						21,000			1,000
Yolo	40	356			6,000		107,500		201,425	4,650
Yuba	40	350			65	155	90,000	5,400	70,000	3,200
Totals	2,644	29,243	100		11,874	1,696	4,419,627	5,488,266	12,292,230	468,185

TABLE OF STATISTICS—Continued.

COUNTIES.	Number of apple trees.	Number of peach trees.	Number of pear trees.	Number of plum trees.	Number of cherry trees.	Number of nectarine trees	Number of quince trees.	Number of apricot trees.	Number of fig trees	Number of lemon trees.
Alameda	88,700	12,900	33,400	20,750	29,200	1,150	2,110	3,780	1,340	88
Alpine	100	50								
Amador	31,300	18,300	6,000	5,400	2,300	980	2,100	1,850	1,300	130
Butte										
Calaveras	30,000	16,400	5,360	3,110	1,166	728	52	11	400	10
Colusa	40,000	50,000	4,000	2,500	800	1,000	300	950	675	10
Contra Costa	35,200	18,800	8,720	3,500	3,100	290	1,610	740	700	35
Del Norte	9,556	190	474	439	300	15	23	7	4	6
El Dorado	90,741	40,973	11,426	6,532	2,914	713	1,014	602	921	
Fresno	1,865	2,937	442	318	93	80	35	175	225	
Humboldt	49,420	556	1,015	2,044	1,336		55	25	5	
Inyo	550	700	125	75	28	50	15	35	10	
Kern	500	800	150	300	110	80	55	300	240	15
Klamath	4,700	2,000	400	500	270	93	65	42		
Lake	11,143	6,002	1,791	2,431	362	87	126	194	158	
Lassen	5,512	2,617	358	474	64	38	127	196		
Los Angeles	7,100	11,100	5,200	200	150	400	1,100	1,850	2,000	3,700
Marin										
Mariposa	6,000	6,800	900	400	200	100	100	400	300	
Mendocino	25,000	22,000	3,000	2,100	640	370	180	70		

Merced	4,200	7,422	3,271	2,144	602	576	247	972	481	10
Mono	650	112	6	100						
Monterey	31,740	13,517	19,970	31,220	1,185	561	93	1,182	201	47
Napa	59,465	26,310	17,870	6,410	10,470	855	1,430	1,895	830	24
Nevada	24,500	12,875	3,806	2,566	1,578	780	540	1,180	860	15
Placer	55,971	35,864	19,871	11,773	5,783	3,410	2,170	271	1,998	40
Plumas	3,781	567	337	155	55	15	27	7		
Sacramento	92,329	95,238	32,823	19,632	7,725	3,988	3,841	12,697	4,257	575
San Bernardino	8,200	14,320	795	1,430	110	385	294	830	640	415
San Diego	4,900	2,960	530	475	395	200	280	315	385	290
San Francisco										
San Joaquin	47,000	30,000	9,000	6,000	1,250	1,000	1,000	2,750	3,500	12
San Luis Obispo	2,000	2,000	1,000	300	100	50	300	300	350	50
San Mateo	15,000	1,500	1,500	1,000	1,200	1,000	560	1,000	50	10
Santa Barbara	26,016	13,000	9,515	1,000	3,008	1,017	3,400	4,901	8,400	1,200
Santa Clara	1,107,840	83,650	75,260	25,890	20,430	1,580	7,980	8,650	1,700	25
Santa Cruz	50,669	5,880	4,914	4,727	2,503	109	530	841	291	25
Shasta										
Sierra	7,810	5,100	981	389	390	87	107	40	11	2
Siskiyou	37,500	15,840	2,080	1,600	1,240	512	500	312	44	
Solano	29,461	22,681	12,641	5,721	4,820	350	304	12,964	4,297	27
Sonoma	260,320	50,500	14,250	38,760	7,856	985	3,408	1,420	1,395	
Stanislaus	3,450	6,080	890	675	190	95	75	450	560	
Sutter	19,299	11,784	4,392	4,620	595	1,123	779	4,983	2,924	21
Tehama	11,054	26,040	9,412	10,150	804	752	413	722	716	8
Trinity	17,930	7,000	1,575	980	400	116	130	76		
Tulare	22,250	75,559	5,867	1,176	342	397	687	1,355	1,868	374
Tuolumne	5,300	4,800	4,600	3,100	2,250	1,750	1,450	950	2,200	150
Yolo	23,638	34,942	7,675	3,942	2,647	1,023	885	3,526	3,070	17
Yuba	37,863	26,715	8,860	5,950	1,883	2,220	2,900	4,550	2,300	60
Totals	2,446,523	835,321	356,252	243,058	122,864	31,110	43,397	78,238	51,606	7,381

TABLE OF STATISTICS—Continued.

COUNTIES.	Number of orange trees	Number of olive trees	Number of prune trees	Number of mulberry trees	Number of almond trees	Number of walnut trees	Number of gooseberry bushes	Number of raspberry bushes	Number of strawberry vines	Number of grape vines
Alameda	64	380	4,730	940	7,380	1,750	49,900	716,400	6,110,500	138,260
Alpine							5,000	2,000		
Amador	120	25	260	340	1,650	400	9,009	14,300	109,000	1,190,000
Butte										
Calaveras	28	2	45	700	100	903	3,300	2,500	300,000	368,000
Colusa	20			100	550	175	75	260	400	125,000
Contra Costa	80	100	120	7,850	340	2,500	5,000	5,200	600	371,800
Del Norte	4				1	42	538	43,300	7,100	38
El Dorado	8	3	34	63,400	380	492	8,239	20,137	154,290	1,584,391
Fresno	10		17			88	275	1,750	10,400	12,600
Humboldt					22	65	3,350	25,150	44,820	360
Inyo			5	25		30	250	275	15,000	10,000
Kern	53	7	5	75	2	100	3,000	40,000	6,000	7,000
Klamath							1,100	8,000	1,500	1,378
Lake	15		56	129	269	218	952	40	16,137	30,979
Lassen						87	388	4,818	30,000	3,438
Los Angeles	34,000	2,000	110	276,000	630	5,100	1,000	6,000	146,300	4,137,400
Marin										
Mariposa				100	20		1,000	2,000	2,000,000	150,000
Mendocino						70	20,000	10,000	150,000	25,000

Merced	5	7	18	87	104	108	450	281	4,776	150,000
Mono							150	280	3,180	
Monterey		42	213	1,217	396	154	2,600	2,100	2,700	198,600
Napa	50		170	54,640	2,990	800	8,000	810	4,000	2,172,900
Nevada	120		280	129,000	421	540	2,640	21,000	170,000	450,000
Placer	62	30	871	4,868	824	697	1,938	50,536	171,600	813,514
Plumas					1	5	567	2,454	18,465	16
Sacramento	542	192	606	209,596	4,874	19,758	4,069	18,706	370,562	1,948,756
San Bernardino	875	96	225	1,230	685	930	450	749	15,000	495,000
San Diego	233	300		7,000	230	300		500	5,000	30,000
San Francisco										
San Joaquin	30	6	300	250	500	475	3,000	2,000	30,000	750,000
San Luis Obispo	50	500			100	300			20,000	100,000
San Mateo	15	15	100	25,000	500	550	1,000	1,200	15,000	
Santa Barbara	1,508	34,504	2,500	20,517	18,785	6,070	6,950	1,300	120,500	596,000
Santa Clara	167	155	6,750	16,980	525	2,500	20,150	2,750	3,260,500	1,100,000
Santa Cruz	60	11	322	3,708	163	1,092	3,354	31,166	154,800	312,000
Shasta										
Sierra	1		17	20	12	20	2,420	11,000	5,700	12,200
Siskiyou				9,600	22	137	10,200	9,800	60,000	57,000
Solano	81	15	178	845	3,950	3,852	1,060	200	3,200	1,491,300
Sonoma	40		350	2,200	3,250	1,575	14,700	4,300	150,800	3,960,850
Stanislaus	10			8	40	12			25,000	240,000
Sutter	60	1	101	68,390	1,706	1,851	303	614	900	296,820
Tehama	14	7	32	82	73	63	847	315	228,160	642,997
Trinity					1	1	2,000	6,000	96,000	20,096
Tulare	129	24	39	5,498	305	1,012	645		185,000	
Tuolumne	70		350	700	175	470	17,000	27,000	70,000	1,450,000
Yolo	217	16	215	82,722	3,337	2,310	940	1,150	1,200	546,350
Yuba	250	48	40	5,368	4,165	698	6,500	14,000	120,000	490,000
Totals	38,991	38,486	19,059	999,175	59,478	58,300	224,300	1,112,341	14,414,090	26,479,983

TABLE OF STATISTICS—Continued.

COUNTIES.	Gallons of wine.....	Gallons of brandy.....	Number of horses.....	Number of mules.....	Number of bulls.....	Number of asses.....	Number of cows.....	Number of calves.....	Number of beef cattle	Number of oxen.....
Alameda	4,780	865	7,240	850	76	17	4,950	2,618	1,690	432
Alpine			475	25	30		250	240	500	50
Amador	58,300	950	2,950	370	60	20	2,150	1,400	1,300	160
Butte										
Calaveras	136,000	9,360	2,500	210		39	2,009	1,513	2,370	272
Colusa			8,058	625			1,000			
Contra Costa	70,000		6,820	600	430	35	8,720	6,500	9,304	46
Del Norte			656	94	44	1	940	792	1,030	99
El Dorado	109,972	750	2,340	177	9	56	3,580	2,872	3,974	304
Fresno			6,088	680	500	75	30,000	75,215	13,370	180
Humboldt			6,192	434	225	15	11,317	8,450	3,327	464
Inyo			3,500	450	20	150	1,000	650	7,848	100
Kern			5,618	270		62	48,925	5,222	4,651	244
Klamath			600	400		9	800	583	1,800	85
Lake			1,766	168	25	5	1,647	1,456	2,655	56
Lassen			2,073	229		3	2,816	2,467	6,382	86
Los Angeles	1,064,000	59,600	14,000	3,100	200	360	3,800	3,550	19,000	450
Marin										
Mariposa	15,000	1,000	1,600	250		100	1,800	1,800	5,000	300
Mendocino			7,800	2,250	430	30	7,000	6,000	3,000	300

Merced	10,000	2,000	1,782	350	4,280	15	11,320	10,000	8,000	500
Mono			728	39	16	15	672	653	1,737	28
Monterey	6,000	2,800	9,097	488		20	8,889	4,042	24,036	78
Napa	297,070	3,990	5,700	510	80	40	3,410	2,650	4,100	80
Nevada	50,000	1,200	2,756	158	25	4	3,250	2,165	2,700	630
Placer	173,128	5,496	2,239	137	43	26	2,739	892	2,879	243
Plumas			1,281	123	89	8	2,804	2,808	2,112	116
Sacramento	170,369	6,365	8,859	519	232	27	7,755	6,997	3,991	172
San Bernardino	45,300	9,500	7,200	620	95	35	2,550	2,300	6,200	175
San Diego	2,500		5,634	527	120	515	1,785	1,663	15,273	447
San Francisco										
San Joaquin	37,000	400	11,903	1,141		12	4,840	5,500	11,343	250
San Luis Obispo	800		8,000	300	500	150	20,000	20,000	20,000	1,000
San Mateo			2,800	256	15	20	5,250	1,650	1,400	160
Santa Barbara	100,002	506	5,390	494	258	54	2,923	1,796	4,829	149
Santa Clara	60,000	12,000	9,750	1,200	340	5	5,960	3,790	2,420	460
Santa Cruz	13,360	1,000	2,193	125		11	2,803	1,565	2,401	320
Shasta										
Sierra	1,200		920	96		18	1,700	1,470	1,407	218
Siskiyou	4,500		9,820	1,140	460	38	5,100	3,800	2,220	420
Solano	284,321	5,960	7,950	1,560		8	4,641	3,845	7,421	41
Sonoma	750,000	9,250	11,088	1,125		36	15,381	28,226	1,049	434
Stanislaus	24,200	200	3,400	600			1,200	900	600	
Sutter	31,215	560	5,943	437		7	3,472	2,177	5,733	16
Tehama	50,000	1,544	6,400	2,013		11	6,340	3,000	800	110
Trinity	157		540	176		3	642	410	831	146
Tulare	8,855	3,500	8,735	428		45	12,459	8,428	28,162	186
Tuolumne	58,000	12,500	3,870	275		128	2,900	1,600	1,550	178
Yolo	84,700	5,500	9,773	1,167	298	17	6,449	2,869	1,644	
Yuba	75,000	1,150	3,975	378	150	11	4,009	2,132	3,976	193
Totals	3,795,729	157,964	237,992	27,564	9,050	2,256	283,947	248,656	256,015	10,398

TABLE OF STATISTICS—Continued.

COUNTIES.	Total number of neat cattle	Number of sheep	Number of Cashmere and Angora goats	Number of hogs	Number of chickens	Number of turkeys	Number of geese	Number of ducks	Number of hives of bees.
Alameda	17,797	41,330		32,960	58,700	4,580	1,120	6,970	394
Alpine	1,570		300	100	1,000	100			
Amador	5,070	8,500	125	3,150	14,500	1,850	1,100	950	300
Butte									
Calaveras	6,155	4,300	2,097	6,800	140,070	1,400	480	1,019	392
Colusa	20,265	181,891		27,756					500
Contra Costa	25,000	29,000	40	14,400	21,300	1,360	940	1,120	510
Del Norte	2,905	1,053		918	2,803	8	69	114	156
El Dorado	10,739	9,336	704	4,638	9,122	711	430	514	612
Fresno	119,265	141,870	7,375	20,260	8,880	1,200	83	712	385
Humboldt	27,622	11,098		8,850	18,885	875	240	260	223
Inyo	9,618	500	50	500	3,000	200		100	30
Kern	59,042	165,768	20	3,781	6,700	381	47	257	200
Klamath	3,268	20	50	900	3,000	10	5	18	25
Lake	7,778	13,994	1	10,564	20,920	2,009	580	578	228
Lassen	11,751	1,826		1,081	7,234	211	32	128	
Los Angeles	27,000	572,000	10	6,100	39,200	1,840	570	3,000	2,800
Marin									
Mariposa	10,850	27,000	1,500	10,000	15,000	2,000	300	1,000	8
Mendocino	16,730	90,000		34,000	30,000	3,000	200	2,700	500

Merced	34,100	138,843	880	2,560	5,000	2,000	300	1,100	500
Mono	3,888	28	18	230	1,030	20	10	48	9
Monterey	37,045	197,167	1,637	8,609	48,600	728	911	1,280	3,315
Napa	10,320	9,800	280	12,700	18,900	6,200	570	3,100	250
Nevada	10,805	4,655		1,500	6,700	3,500	375	480	325
Placer	9,298	26,193	1,933	10,395	48,805	7,163	241	481	1,096
Plumas	9,261	3,402		882	5,371	96	13	167	68
Sacramento	19,147	107,256	42	9,858	41,123	7,697	1,935	1,519	1,578
San Bernardino	11,320	41,200	77	2,220	120,000	650	425	2,150	450
San Diego	19,288	67,178	912	1,139	7,036	1,500	1,100	900	500
San Francisco									
San Joaquin	21,937	53,572	960	15,000	60,000	6,000	1,500	2,000	1,000
San Luis Obispo	61,500	110,000	200	6,000	50,000	2,000	500	2,000	900
San Mateo	11,551	750	10	1,800	8,060	250	250	400	340
Santa Barbara	9,697	286,968	495	1,281	50,980	521	152	1,401	502
Santa Clara	23,925	40,000	1,950	2,750	102,690	1,400	3,000	3,670	1,200
Santa Cruz	6,089	735	215	3,221	12,360	340	313	283	167
Shasta									
Sierra	4,795	687	1	896	746	218	114	387	127
Siskiyou	12,000	28,000		6,000	21,240	1,110	594	820	1,000
Solano	16,248	49,875	50	15,961	71,496	8,467	1,508	4,129	374
Sonoma	45,090	64,208	175	16,346	60,500	2,850	6,000	3,940	420
Stanislaus	2,700	170,000		3,000	27,000	4,600	700	450	860
Sutter	11,398	24,390	36	11,614	22,580	2,804	231	131	441
Tehama	10,250	144,000	8	11,000	19,200	8,000	800	240	320
Trinity	2,029	200		600	8,064	100	75	200	351
Tulare	58,439	231,839	4	9,098	7,468	2,238	603	713	563
Tuolumne	10,501	13,200	1,500	2,550	12,000	5,775	184	524	
Yolo	11,260	40,285		18,193	41,726	3,250	573	518	346
Yuba	10,460	24,444	442	7,535	25,800	13,000	670	1,500	540
Totals	876,766	3,178,371	24,097	369,696	1,304,649	114,212	29,543	53,971	24,835

TABLE OF STATISTICS—Continued.

COUNTIES.	GRIST MILLS.				Barrels of flour made...	Bushels of corn ground...	SAW MILLS.		Feet of lumber sawed...	No. o shingles made...
	Steam power.....	Run of stones.....	Water power.....	Run of stones.....			Steam power.....	Water power.....		
Alameda	5	24	2	3	28,460	22,330				
Alpine							3	1	1,065,000	300,000
Amador	1	3	1	2	4,150	2,900	3		4,960,060	1,300,000
Butte										
Calaveras							4	6	190,000	27,000
Colusa	3	10					2		1,000,000	
Contra Costa	4	11			10,000	1,000				
Del Norte	1	1	1	2	980	140	2	2	3,750,000	100,000
El Dorado	1	2	1	1	30,000		15	10	9,001,620	455,000
Fresno			1	2	350	800	2	1	1,024,000	200,000
Humboldt	1	1	1	1	2,850	375	7	2	40,000,000	16,300,000
Inyo			2	4	2,000	600		3	1,000,000	500,000
Kern	1	2	3	3	800	300	2	2	250,000	150,000
Klamath			1	2	1,200	400	2	5	5,000,000	500,000
Lake	1	1	1	2	21,600	2,000	3	2		500,000
Lassen			2	3	3,700	500	1	2	500,000	50,000
Los Angeles			6	11	2,500	41,000	2		20,000	
Marin										
Mariposa							6		2,000,000	300,000
Mendocino	2	2	5	5	27,000	600	18		70,000,000	3,000,000

Merced			3	8	12,000	8,000				
Mono			1	2	600	60	2	3	524,000	
Monterey	2	2	1	1	2,150	240				
Napa	2	6	1	2	17,480	3,200	2		190,000	21,000
Nevada	1	4			18,000	4,500	27	11	35,670,000	12,000,000
Placer							12	3	17,000,000	500,000
Plumas			1	2	1,050		4	6	885,000	10,000
Sacramento	4	18	1	1	211,400	17,000	2		Re-sawing.	
San Bernardino			2	3	7,300	3,200	4		3,500,000	800,000
San Diego	1	3	1	2	3,000	500				
San Francisco	11	42			697,150					
San Joaquin	4	14			85,000	4,500				
San Luis Obispo			2	3			2		3,000,000	
San Mateo	1	2	1	2	3,200	300	14	3	5,000,000	130,000,000
Santa Barbara	1	2	1	2		30,000				
Santa Clara	8	24	3	8	373,000	3,500	3	4	7,975,000	975,000
Santa Cruz	2	5	3	6	23,000	3,924	16	7	13,886,000	15,000,000
Shasta										
Sierra			1	2	98		9	12	6,000,000	590,000
Siskiyou	2	4	6	9	26,840	2,960	3	11	5,200,000	1,060,000
Solano	4	19			19,819	1,160				
Sonoma	4	6	4	4	60,300	5,900	13	1	9,200,000	5,000,000
Stanislaus	1	3	1	4	28,000	1,000				
Sutter										
Tehama			3	8	17,000	2,000	4	2	7,000,000	300,000
Trinity			1	1	530	200		15	1,042,000	
Tulare	1	3	2	4	2,989	3,500	3	1	2,625,000	200,000
Tuolumne	2	5					4	4	3,000,000	
Yolo	2	10			52,500	13,500				
Yuba	3	12	1	2	60,000	14,000	9	4	4,000,000	800,000
Totals	77	241	67	117	1,847,996	196,089	205	123	265,457,620	190,938,000

TABLE OF STATISTICS—Continued.

COUNTIES.	QUARTZ MILLS.		MINING DITCHES.			IRRIGATING DITCHES.		WOOLLEN MILLS.	
	Number	Tons crushed	Number	Miles in length	Amount of water used per day—inches	Number	Acres irrigated	Number	Pounds of wool used
Alameda									
Alpine	5					2	2,500		
Amador	29	87,500	46	470	5,980	40	1,470		
Butte									
Calaveras	28	136,860	19	515	5,800	27	272		
Colusa									
Contra Costa									
Del Norte			20	81	5,700	4	35		
El Dorado	37	20,900	59	966	4,500	31	1,872		
Fresno		75				23	1,375		
Humboldt									
Inyo	8	10,000				20	4,500		
Kern	9	790	1	5	1,728	3	3,000		
Klamath	4	680	80	90	16,000	10	800		
Lake						1	600		
Lassen						1	1,200		
Los Angeles	2	5,900	3	25	800	52	18,200		
Marin									
Mariposa	34	30,000	10	66		60	210		
Mendocino									

Merced						7	1,400	1	300,000
Mono	4	900	2	13	900	14	4,000		
Monterey									
Napa									
Nevada	78	240,000	70	1,026	42,400	18	500		
Placer	14	6,000	10	302	14,000				
Plumas	8	39,650	53	211	17,850	16	880		
Sacramento			3	93	5,600			1	
San Bernardino	1		1	3	500	45	8,600		
San Diego	5	800							
San Francisco								2	2,800,000
San Joaquin						2	3,000	1	30,000
San Luis Obispo						30	2,000		
San Mateo									
Santa Barbara									
Santa Clara						60	4,360	2	400,000
Santa Cruz									
Shasta									
Sierra	23	53,000	50	213	2,400	19	320		
Siskiyou	4	12,000	24	290	5,000	180	6,900		
Solano									
Sonoma									
Stanislaus			2	10	500				
Sutter						1	400		
Tehama						43	700		
Trinity	1	150		290	38,000	74	650		
Tulare	2					110	5,000		
Tuolumne	8		4	135		2	15,000		
Yolo									
Yuba	4		60	70	4,200	20	600	1	250,000
Totals	308	645,205	516	4,874	171,858	915	90,344	8	3,780,000

TABLE OF STATISTICS—Continued.

COUNTIES.	COTTON MILLS.		COAL.	RAILROADS.		DISTILLERIES.		BREWERIES.	
	Number	Pounds of cotton used	Tons mined	Number	Miles in length	Number	Gallons	Number	Gallons
Alameda				3	90¾			6	277,500
Alpine								2	1,500
Amador			1,100	1	¾	2		5	
Butte									
Calaveras				1	¾				
Colusa									
Contra Costa			120,000	2	13			1	
Del Norte				1	3			1	5,200
El Dorado				1	18¾	2	750	4	17,100
Fresno									
Humboldt				1	2			2	
Inyo								2	10,000
Kern								1	1,200
Klamath				2	2				
Lake								1	4,000
Lassen									
Los Angeles				1	20½	42	59,600	2	28,000
Marin									
Mariposa								2	
Mendocino						1		5	15,000

Merced						3	2,000		
Mono									
Monterey						2		2	12,000
Napa				2	41	5	3,990	2	19,000
Nevada				1	30¼	4		18	
Placer				2	112	3	6,000	6	57,574
Plumas								4	68,000
Sacramento				4	63	8	4,276	8	311,400
San Bernardino						3	9,500	2	
San Diego								2	13,000
San Francisco						4	790,500	33	1,605,000
San Joaquin				5	93			3	60,000
San Luis Obispo								1	70,000
San Mateo				1	152			2	
Santa Barbara						2	506	2	2,900
Santa Clara				4	65	2	12,000	6	250,000
Santa Cruz						1	1,000	5	69,210
Shasta									
Sierra								7	3,400
Siskiyou								5	
Solano				2	48			3	11,579
Sonoma				2	41½	4	25,000	2	40,000
Stanislaus				2	29	1		2	5,040
Sutter				2	34	3		1	
Tehama				1	11½				
Trinity								2	2,600
Tulare						6			13,500
Tuolumne				2	32	7		6	
Yolo						11	90,200	3	37,000
Yuba				3	28¼	3		1	
Totals			121,100	46	932	119	1,005,322	162	3,010,703

TABLE OF STATISTICS—Continued.

COUNTIES.	ASSESSED VALUE OF PROPERTY.				Estimated tot'l population.....	Registered Voters.....	Poll Tax collected.....
	Real estate.	Improvements.....	Personal property..	Total valuation.....			
Alameda	$8,370,769 00	$1,851,675 00	$2,170,882 00	$12,393,326 00	26,000	5,995	$7,474 00
Alpine.....	188,000 00	63,000 00	152,000 00	403,000 00	1,000	240	163 00
Amador	317,120 00	968,440 00	713,287 00	1,998,847 00	10,390	2,340	1,875 00
Butte.....							
Calaveras	310,446 00	272,878 00	505,382 00	1,088,706 00			
Colusa.....	2,000,000 00	500,000 00	2,000,000 00	4,500,000 00	8,900	2,877	
Contra Costa	1,667,828 00	519,963 00	1,046,479 00	3,234,270 00	10,000	2,677	3,018 00
Del Norte.....	92,531 00	121,510 00	262,579 00	476,620 00	2,350	501	1,359 00
El Dorado.....	367,860 00	749,810 00	1,030,773 00	2,148,443 00	10,500	3,300	4,406 00
Fresno.....	1,785,761 00	107,415 00	1,536,034 00	3,429,210 00	3,500	652	652 00
Humboldt.....	756,850 00	483,185 00	1,203,916 00	2,443,951 00	10,000	2,361	2,531 00
Inyo	92,872 00	167,815 00	473,784 00	734,471 00	2,800	600	300 00
Kern	856,000 00	144,000 00	1,300,000 00	2,300,000 00	2,300	700	600 00
Klamath.....	112,795 00	62,253 00	254,851 00	429,899 00	2,000	394	700 00
Lake	With improvements.	631,730 00	453,874 00	1,085,604 00	3,700	950	850 00
Lassen	67,135 00	136,040 00	434,908 00	638,083 00	1,400	473	218 00
Los Angeles.....	4,377,292 00	With real estate.	2,540,782 00	6,918,074 00	16,300	3,850	3,000 00
Marin							
Mariposa	211,115 00	396,910 00	546,703 00	1,154,728 00	6,000	1,300	2,344 00
Mendocino.....					8,000	2,340	
Merced	2,114,114 00	205,420 00	1,124,982 00	3,444,516 00	2,900	1,200	1,000 00
Mono.....	38,070 00	85,020 00	210,881 00	333,971 00	475	252	225 00
Monterey	2,114,184 36	377,575 00	1,478,085 26	3,969,844 62	9,858	2,553	2,522 00

Napa	1,971,990 00	990,595 00	842,875 00	3,805,460 00	10,500	2,237	1,000 00
Nevada	2,208,713 00	1,066,495 00	1,497,149 00	4,772,357 00	20,000	6,452	7,200 00
Placer					11,500	6,974	
Plumas	606,362 00	257,740 00	597,190 00	1,461,292 00	4,500	1,830	1,315 00
Sacramento	3,500,000 00	3,200,000 00	5,100,000 00	11,800,000 00	35,000	7,500	10,700 00
San Bernardino	630,500 00	20,200 00	384,000 00	1,034,700 00	7,200	1,420	530 00
San Diego	1,583,904 00	249,012 00	732,206 00	2,565,212 00	4,500	1,400	1,560 00
San Francisco	75,000,000 00	With real estate.	27,595,498 85	102,595,498 85	150,000	33,000	Not given.
San Joaquin	4,562,565 00	2,078,615 00	2,187,800 00	8,828,980 00	25,000	6,000	2,746 00
San Luis Obispo	1,200,000 00	200,000 00	1,000,000 00	2,400,000 00	6,000	1,527	
San Mateo	1,962,026 00	With real estate.	359,454 00	2,321,480 00	6,400	2,050	663 00
Santa Barbara	2,063,735 47	With real estate.	858,870 00	2,922,605 47	9,000	1,932	600 00
Santa Clara	5,750,314 00	3,391,178 00	2,969,409 00	12,110,901 00	26,246	7,526	9,400 00
Santa Cruz	1,066,373 00	579,026 00	500,910 00	2,146,309 00	8,800		2,800 00
Shasta							
Sierra	798,940 00	376,085 00	713,643 00	1,888,668 00	5,550	2,150	3,510 00
Siskiyou	707,933 00	With real estate.	1,446,277 00	2,154,210 00	6,920	2,150	1,776 00
Solano	4,763,155 00	With real estate.	1,335,706 00	6,098,861 00	24,000	4,129	4,450 00
Sonoma	4,041,250 00	1,303,527 00	2,706,010 00	8,050,787 00	22,500	5,240	7,052 00
Stanislaus	1,814,057 00	323,035 00	946,870 00	3,083,962 00	5,600	1,800	
Sutter	993,101 00	669,821 00	1,000,519 00	2,663,441 00	7,100	1,300	1,160 00
Tehama	964,836 00	338,896 00	1,141,286 00	2,445,018 00	6,000	1,550	3,200 00
Trinity	68,650 00	275,000 00	189,250 00	533,000 00	3,170	863	740 00
Tulare					10,000	1,600	905 00
Tuolumne	245,758 00	284,368 00	483,266 00	1,013,392 00	8,050	2,630	
Yolo	1,946,382 00	728,985 00	1,609,690 00	4,285,057 00	10,000	2,235	1,465 00
Yuba	1,004,735 00	1,375,640 00	1,637,385 00	4,017,760 00	11,000	3,500	4,468 00
Totals	$145,296,121 83	$25,552,857 00	$77,275,536 11	$248,124,514 94	582,909	144,650	$100,417 00

ANNUAL MEETING

OF THE

STATE AGRICULTURAL SOCIETY FOR 1872

BEING THE EIGHTEENTH ANNUAL MEETING.

The eighteenth annual meeting of the State Agricultural Society took place January 24th, at the Pavilion. There was a full attendance of the members, not only from Sacramento and vicinity, but from the adjoining counties. The proceedings were characterized by great harmony and unanimity of feeling.

At half-past twelve o'clock the meeting was called to order by the President, Charles F. Reed. He announced that the business in order before the Society was the reports of the officers and the election of a President and three Trustees. The first thing in order, he remarked, was the reading of the annual minutes, which would now take place.

The Corresponding Secretary commenced reading, when Senator Lewis moved that the further reading be dispensed with, which motion was carried.

The President announced that the next business in order would be the

REPORT OF THE BOARD OF DIRECTORS.

The Secretary commenced the reading of the report, when it was moved that its further reading be dispensed with. Motion adopted.

[The report in full will be found on page three.]

GENERAL BUSINESS.

Dr. Harkness moved that a committee of five be appointed by the Chair to consider and report upon the financial statement of the Secretary.

It was moved as an amendment that the committee be composed of three members instead of five. Carried.

The President announced as the committee, Dr. Harkness, L. A. Upson, and John H. Carroll.

Dr. Harkness stated that he must decline acting on the committee.

The President said he would name in the place of Dr. Harkness, Marcus D. Boruck, of San Francisco.

Mr. Boruck declined, when the President appointed in his place Senator Perkins, of Butte.

The President then remarked that he had intended to call for the credentials of members residing outside of Sacramento, and would do so now. He would request members of the Society from other parts of the State to pass in their credentials.

The credentials of the members were presented as follows:

Siskiyou—Senator Irwin, J. K. Luttrell.

Sonoma and Marin—H. L. Weston, F. W. Lougee, Lee Elsworth, H. N. Hinshaw.

Santa Clara—W. C. Wilson, James P. Sargent, H. W. Frank, C. Maclay.

Upper Sacramento District—G. C. Perkins, W. N. De Haven, E. Hallet.

San Joaquin Valley Agricultural Society—George West, T. K. Hook, George S. Evans.

Northern District Agricultural Society—Honorable C. Kent.

Bay District Agricultural Society—Honorable John Boggs, F. A. Miller.

The President then called the attention of members to the reading by the Corresponding Secretary of the following communication from the

DEPARTMENT OF AGRICULTURE.

WASHINGTON, D. C. December 20th, 1871.

I. N. HOAG, *Sacramento, California:*

DEAR SIR: By the Act of the second of July, eighteen hundred and sixty-two, Congress donated to the several States a portion of the public lands, in the ratio of their population, for the purpose of establishing Agricultural Colleges, thereby evincing a purpose to promote that great interest through the instrumentality of the respective States. Many colleges have been and doubtless many more will be established. State Agricultural and Horticultural Societies and Boards of Agriculture have been established by law in many States. A correspondence and consultation between friends of these interests have led to the conclusion that a Convention of Delegates representing them, for the purpose of conferring upon subjects of mutual interests, would promote the good of all. It has been suggested that I take the responsibility of initiating such a meeting. I therefore propose that each Agricultural College, State Agricultural Society, State Horticultural Society, and State Board of Agriculture depute two Delegates to meet in Convention at the City of Washington on Thursday, the fifteenth of February next, to take such action regarding the interests of agriculture as they may deem expedient.

I am, very respectfully,

FREDERICK WATTS, Commissioner.

Captain Haynie moved that the Society elect two Delegates to the Convention spoken of.

The motion was adopted.

L. A. Upson moved to reconsider the vote just passed, for the purpose of having the subject matter referred to the Board of Directors.

The motion was reconsidered, and it was then moved by Mr. Upson that the Board of Directors be authorized to appoint the two Delegates.

The motion was adopted.

The President then presented to the meeting a communication from the

SIGNAL OFFICE AT WASHINGTON.

WASHINGTON, January 13th.

I. N. HOAG, *Secretary of the Meteorological Committee of the State Board of Agriculture, Sacramento, California:*

SIR: By direction of the Chief Signal Officer of the Army I have the honor to acknowledge and answer your communication to him of the twenty-seventh ultimo. This office is much gratified at the commendation of its labors expressed by you, and is very desirous to establish more stations on the Pacific slope with reference to the enlargement of the system of observation, report, and forecast for that region. At this time, however, the condition of the appropriation is such that curtailment rather than expansion will become necessary without special action of Congress. What is now done is the utmost possible with the means given. There will be no difficulty about the occupancy of any necessary stations, provided the Secretary of War be authorized to use sufficient force and Congress will furnish the necessary money to meet the really economical cost. It is sufficient that a representation from your Board, with petitions from corporate bodies and prominent citizens, addressed to the Senators and members of Congress representing the parties interested, and other petitions addressed to the Secretary of War, under cover of this office, would be useful in accomplishing the object desired.

I am, sir, respectfully yours,

GARRICK MALLERY,
Captain and Brevet Lieutenant Colonel United States Army, Acting Signal Officer and Assistant.

Dr. Logan said:

Mr. President: The letter which has just been read by our Secretary is the result, as you have been informed, of the action which has been taken by your Committee on the Signal Service, of which committee I have the honor of being a member. It is unnecessary to consume the valuable time of the meeting in discussing the advantages to be derived from a more extensive establishment of this important arm of the agricultural department—they are patent, and have been recognized and appreciated by the whole community. Permit me, therefore, to offer in lieu of a report from the committee I represent the following preamble and resolution:

WHEREAS, From the success which has attended the operations of the Signal Service in predicting storms on the Pacific Coast, it is evident that additional benefits may be secured by an increase in the number of stations; therefore,

Resolved, That the State Board of Agriculture be requested to memorialize Congress urging the necessary appropriations for such increase of stations, and that proper representations be made to the War Department in favor of one of these stations being located at Sacramento—it being a central point, both geographically and climatically.

Senator Minis moved that the resolution be adopted.

The motion was carried unanimously.

Secretary Hoag then announced that the next business in order was the election of a President of the Society.

Senator Lewis moved that the election be conducted by ballot and two Tellers be selected.

J. H. Carroll here offered the following preamble and resolution:

Whereas, The State Agricultural Society fully appreciates the importance of having the products of our State in all the departments of industry represented at the World's or International Exhibition at Vienna in eighteen hundred and seventy-three; and, whereas, for want of proper countenance and assistance from the State Government we were but poorly represented at the International Exposition held in Paris in eighteen hundred and sixty-seven; therefore,

Resolved, That this Society earnestly recommend the Legislature to make a liberal appropriation to assist in securing a creditable exhibition at the World's Fair in Vienna in eighteen hundred and seventy-three, and also to appoint proper Commissioners to see that such products are well displayed, and to report on the exhibition generally.

The resolution was adopted.

The President then announced as Tellers, L. Powers and C. H. Ross.

Nominations were called for and Frank S. Malone nominated Charles F. Reed, and moved that his election be made unanimous.

Senator Minis seconded the nomination, and moved that he be nominated by acclamation.

Senator Lewis being in the chair, F. S. Malone suggested that the Secretary cast the full vote of the Society.

The suggestion was adopted.

The Secretary deposited the vote and the Chairman, Senator Lewis, declared that C. F. Reed was elected President.

It was then announced by the Chair that the next business in order was the election of three Directors in the place of Edgar Mills, Robert Hamilton, and C. T. Wheeler.

M. D. Boruck moved that the list of the members of the Board be read, which was done by the Secretary.

Senator Lewis put in nomination Messrs. Mills, Hamilton and Wheeler, and remarked that for some time past he had acted in concert with these gentlemen, and he looked upon their presence at the Board as almost indispensable.

M. D. Boruck inquired how many of the Directors were from Sacramento, and the answer was made from the Chair, four.

The President announced that the nominations were now closed.

Dr. Montgomery here moved that the Secretary be authorized to cast the vote of the Society in the matter of the election of the three members of the Board.

Motion adopted.

The Secretary cast the vote, and the President declared that Edgar Mills, C. T. Wheeler, and Robert Hamilton were elected Directors of the Board for the term of three years.

It was stated that the report of the Finance Committee would be made to the Board of Directors instead of to the Society, inasmuch as its general business was transacted.

Notice was given that the Delegates to the different Agricultural

Societies in the State in attendance at this meeting convene that evening in the Secretary's office in the Pavilion for the purpose of taking action upon a memorial to be presented to the Legislature, asking for appropriation to aid the several District and County Agricultural Associations.

On motion, the meeting adjourned *sine die*.

FIRST MEETING OF THE NEW BOARD.

SACRAMENTO, January 24th, 1872.

The Board met at the call of the President.

Present—Directors Lewis, Hamilton, Mills, Carey, Covey, Younger, Wheeler, and Coleman.

On motion, Colonel Younger and Secretaries Hoag and Beck were appointed to meet the Delegates from the other Agricultural Societies at the Pavilion, at seven o'clock this evening.

On motion, President Reed, Colonel Lewis, and Mr. Carey were appointed a committee to secure the necessary appropriation from the Legislature.

Colonel Younger was voted one hundred and fifty dollars toward defraying his traveling expenses in furthering the interests of the Society.

Benjamin E. Harris and his horse Regulator were suspended for non-payment of entry money.

The President appointed as a committee to revise the premium list Colonel Younger and Mr. Carey, to which was added the President.

President Reed, Directors Covey, Mills, and Hamilton were appointed a committee on the speed programme.

On motion, a vote of thanks was passed to President Reed for his very efficient services during the past year.

The Secretary was instructed to deliver the gold medal in the second department as awarded by the committee.

On motion, the Board proceeded to the election of Treasurer, and R. T. Brown was unanimously elected.

Robert Beck was elected Secretary unanimously.

I. N. Hoag was elected Corresponding Secretary unanimously.

Senator C. Cole and A. A. Sargent were elected Delegates to represent the State Society in the National Convention.

The following was then offered and adopted:

WHEREAS, The rapid strides being made by the Empire of Japan in civilization arrests our attention and challenges the admiration of the civilized world; and, whereas, there are representatives of that empire now in our State engaged in studying agriculture and stock raising; therefore, be it

Resolved, That the State Agricultural Society of the State of California, appreciating as well the advantages to grow out of more intimate commercial relations with the Japanese Empire as the duty we, as Americans, owe to a great and progressive people struggling with a will and emulation never before known for a high civilization, offer our services to them in every way that will be conducive to their interests.

APPENDIX.

NOTES UPON CALIFORNIA PRODUCTS,

SUBMITTED TO THE AMERICAN POMOLOGICAL SOCIETY AT THE ANNUAL MEETING IN RICHMOND.

BY DR. J. STRENTZEL.

Numerous books and innumerable newspaper articles have from time to time heralded to the world the wonderful resources of California, the prolific and mammoth growth of its forest trees, gigantic pumpkins, hefty pears, and luscious grapes, so that but little more on that scope remains to be said. Otherwise, it is of the utmost interest to every terraculturist repeatedly to dwell upon the conditions favorable to the development of those products; to unravel the mooted points regarding the culture of our fruits, and decide upon their adaptability to different sections of the country; and finally, to relate, compare, and compile the individual efforts and experiences.

Favored by a most genial climate and a virgin soil rich in all the elements of plant food, the first seeds here given to the earth grew up luxuriantly, amply rewarding the labors of the culturist. Still, at the threshold of our efforts, we were controverted by the advocates of deep and of shallow plowing, or even trenching, as a preliminary operation to planting. The conviction here appears to be settled, that a deep, mellow, and friable soil will do with less plowing; but heavy, adhesive clays cannot be worked too much, provided the soil is well stirred but not turned over to a great depth nor left too flaky, but well pulverized and compressed. In this during six months rainless climate, if the soil is well pulverized, corn, beans, and many vegetables are raised successfully without a drop of water, and fruit trees develop thriftily. Some ascribe this to capillary attraction of moisture from the bowels of the earth; others, with better reason, to the known processes of condensation. With twenty inches of yearly rainfall favorably distributed, all grain and fruits yield abundant crops. Still, judicious irrigation would enable us to grow perpetual crops during the year, and also, if applied early in the season, would improve the size and juiciness of our fruits without deteriorating their keeping qualities. Newly transplanted trees can gain by irrigation in one the growth of three seasons.

Irrigation, so well understood by the ancients, but neglected under the barbarism of the middle ages, begins to receive that attention commensurate to its importance for California. To prevent and repair waste is an incontroverted axiom in agriculture. Still, there is but little done with us to utilize the most valuable part of our surface soil, or prevent its being carried off by heavy rains and overflow. Millions of acres of the richest soil, now lying barren or with only scanty vegetation, are waiting for the vivifying flow over their surface of the superabundant waters of the Sacramento and San Joaquin rivers and their tributaries, to fill the granaries of the world; and the overflowed or tule land at the conjunction of those rivers, if reclaimed, would surpass in abundance and variety of products the famous delta of the Nile. The work of reclaiming these tule lands is prosecuted most energetically; and the facility of its accomplishment, and the success already achieved in raising bounteous and luxuriant crops, surpasses the most hopeful anticipations. Their value is enhanced by the locality being exempt from miasmatic diseases. They are subject to public entry at one dollar and twenty-five cents per acre, and the proceeds are disbursed for their reclamation. Here are homes for the asking, in the future Holland of the Pacific—the most valuable, the most highly to be prized land in California!

The tap root was another source of botheration, until by digging, observing, and comparing—following up several roots through many yards of gopher holes, some by a circuitous route of over forty feet into a well, and others about the cellar—I concluded that it was wicked to curtail that appendage. It was opposing the instinct of nature by a contracted spirit; besides, it was fighting a shadow. All the trees I ever bought had a superabundance of top, but scanty taps.

In my first efforts at horticulture, I was forcibly impressed, while contemplating the promising fruit buds on my yearling peach trees, that to secure peaches for next season I certainly should not whittle up my darlings into fashionable standards, so I contented myself with pinching off the ends of the shoots, and have invariably followed the practice since with profit, though often mortified by the remark of Eastern visitors, that "The trees looked unnatural." Low-branched fruit trees shade the ground, protect the stem from injury and sun scald, and reduce the expense of pruning and gathering fruit fully fifty per cent.

Our protracted dry season, bright skies, and high temperature, are favorable to the development of fruit buds, hence our fruit trees are weakened in their physique by overbearing; and if to this is added insufficient moisture, close planting, and neglect in pruning, they soon fail. The advice holds good, to follow the renovating system of pruning by shortening in the branches, thinning out the fruit, clean culture, and shading the trunk. There is a needless apprehension with some, that covering the stems of fruit trees with a wash composed of clay, lime, and ashes, which is otherwise very serviceable to protect the stem from manifold injuries, would obstruct the pores of the bark, to which they ascribe the office of lungs. Having had occasion to apply such a mixture some seven years ago, I observe the good effects of that application to this day. The once painted bark of those trees is perfectly smooth and healthy looking, while the bark above has a dull appearance and is covered more or less with moss.

There is considerable difference here in the season of the ripening of many varieties of fruit; some late Winter varieties getting mellow in the Fall; but it depends entirely on the location, influenced by the aspect

of the ground, dryness of the soil and the temperature, and is not general; hence our markets are supplied for many months with a given variety of fruit in all stages of ripeness. From the same cause there is also a great difference (undoubtedly more than in other countries) in the flavor, size, and coloring of California fruit. Our pioneers in horticulture, formerly strangers to that vocation, tried to surpass each other in possessing the greatest number of varieties; and it is to be regretted that in very many instances they were imposed upon by unscrupulous nurserymen with long catalogues of so called choice varieties, which mainly proved perfectly worthless, and the products of those trees now encumber our markets with unsaleable and inferior fruits.

It would be desirable if there could be the same spirit enlisted in the effort of renovating and infusing new vigor in the few really choice and desirable varieties that is now devoted to producing new ones from seed. The effort would be as alluring in its results and require fully as much attention, care, and judicious discrimination, besides affording far more profitable returns; it would necessitate the careful selection of well developed seeds from thrifty seedling trees, if possible, to raise stocks, and the selecting of cions from perfectly healthy young trees bearing a number one fruit and in every way of normal condition.

Our fruit trees are as yet measureably exempt from disease and depredations of insects, but those pests begin to multiply and soon will be as annoying as in the older cultivated sections of the country.

But California can claim preëminence in the culture of the vine. The choicest foreign varieties, either adapted for the table or for wine, thrive to perfection, and it is only a matter of time to render superfluous the importation of raisins and wines. It is not to be expected that a new industry, requiring very nice and careful manipulation, considerable accumulated capital, and many provisions and appliances which in other countries took many generations to establish, can have arrived at perfection within the one decade past; but there is no exaggeration in proclaiming that here are lying idle innumerable most choice spots in every way favorably adapted for viniculture, waiting for the first comer to appropriate his share as a free gift from the nation. Those future princely vineyards can be selected according to whim or knowledge in every desirable aspect, altitude, underlaying strata of decomposed volcanic or aqueous detritus, with any desirable predominance, either of silicius or calcarious formations, and with equally great modifications in climate and other meteorological conditions. The vine once rooted delights in the ardent rays of the sun; no drought checks its growth; no vicissitudes of season destroy the vinegrower's hope in California; no exhausting labor exacts his every moment of existence for carrying on his back the little earth he can scrape between rocks and cliffs to nourish his vine; nor needs he to toil through many unpropitious seasons to obtain now and then a fair crop. The fig, the olive, pomegranate, the citron family, the tea and coffee, and even the tropical palm and banana are ready to fill his lap with golden fruit—a most worthy prize for exertion. The more modest mulberry is destined to exceed them all in value with the silken threads soon to be spun in so many prosperous households. Nut bearing trees of many varieties and the nourishing chestnut are ready as so many substitutes for bread. Even the cork oak takes delight to float us over many difficulties and assist in all good offices towards the vinegrower.

J. STRENTZEL.

Alhambra, August 12th, 1871.

CLAIMS AND CONDITION OF INDUSTRIAL EDUCATION

BY E. S. CARR, M. D., PROFESSOR OF CHEMISTRY AND AGRIGULTURE IN THE UNIVERSITY OF CALIFORNIA.

When I think of the great mechanical and manufacturing interests to which England owes so much of her wealth and prosperity; of the condition of her working classes, the thousands who burrow in her mines and are ground in her factories until all semblance of the higher humanity is lost, and contrast it with the comfort, intelligence, political and social power those very classes so quickly reach in this free land; when I think of the great facilities afforded in Europe for technical and agricultural education, and how careless our Government has been, until recently, in this respect, I realize that "Freedom—that is, the absence of all restrictions which can prevent men from using to their advantage the powers which God has given them—is the mightiest of all the conditions of progress in civilization and culture." Freedom of thought and conscience, planted on such a field, sees that every step of her progress is dependent upon the popular intelligence, and that with every step comes some new question of responsibility; some new social or political problem which requires a trained intellect and will for its solution. If Europe, foreseeing the approaching doom of principalities and powers by the light thrown from these shores, has been preparing for popular government by popular education, how careful and zealous should this nation, holding in trust the faith of all nations in free institutions, be to secure their perpetuity and full development? Never in the history of the world were its toilers and thinkers brought into such close fellowship; the exchanges of products between them has never been so rapid and the good results so generally acknowledged. Our system of popular education is the first great constructive measure of national progress, and this has yet to be moulded to its purposes through a system of higher institutions organized into harmony with the great requirements of our country and period.

THE FIRST GREAT REQUIREMENT.

That the first great requirement of our country is the fullest, freest, and most liberal education of the masses, no one will deny who thinks what the duties of American citizenship are fast coming to be, and of her peculiar position, holding Asia by one hand and Europe by the other. What great questions of race, sex, of political and religious liberty, of property, of capital and labor, are to be acted upon, if not settled, by the children now in our public schools! Can we feel that the kind of training our children are receiving is sufficient, or that best calculated to prepare them for their great responsibilities? How much arithmetic, geometry, and grammar will enable your son to vote intelligently on a

question of free trade, to become Chairman of a legislative committee who have the pauperism, the criminality, the insanity of the State to look after? Does it require years to learn how to build a house or a steamship properly, or to make a machine, and neither time nor training to make a just law?

It must soon be understood and conceded that a thorough training in general science, culminating in the science of life—the scientific study of human nature—is essential to a right performance of any of the functions of government. The reason for this is very simple. Nations are only aggregates of individual life, and all the phenomena displayed on the larger have their explanation in the laws which govern the narrower field of individual action. Legislation will always be a series of experiments, often very poor ones; it will continue to be a kind of tinkering at legalized abuses, until a clear comprehension of the laws of life, and the way in which these laws underlie and determine social growth and organization, is obtained.

I have lingered over these considerations because we are so apt to look only upon science as the instrument of our material prosperity, to congratulate ourselves upon the way in which we have made steam and electricity and various agencies lighten our muscular labor and add to our comfort—forgetting that "there is no wealth but life," including all its powers of labor and of a wise enjoyment of its fruits of labor. The invention of a machine which will do the work of twenty men, though it make the inventor rich and gives to each laborer a certain amount of leisure, is a questionable blessing unless this wealth and leisure become means for the satisfaction of higher wants. If the sons of farmers, manufacturers, and mechanics abandon their fathers' business, which was the source of their wealth and leisure, and transfer all their ambition, influence, and power to the pursuit of rank and reputation and the building up of false standards of social life, we have loss instead of gain; loss in the productive and no gain to the intellectual class. In Europe a mechanical pursuit, like a factory or commercial house, becomes a matter of family pride and inheritance. It is plain that our well to do middle classes are not as well satisfied as those of foreign lands with modest competence; are not honoring their callings by a firm and dignified adherence; but are recklessly and often ruinously following the armies of speculators and spendthrifts.

HOW SHALL WE EDUCATE?

The question has become one of vital importance to the nation, how shall we educate our youth so that there shall be more farmers and more mechanics, more producers in the land? and how shall we raise these pursuits to the rank they deserve in the hierarchy of industries? It is in vain, however, to eulogize callings whose votaries forsake with every opportunity—whose children turn from with disgust. Congress might give every acre of the public domain to found Agricultural and Industrial Colleges, making them not only free but giving a bonus of lands as the reward of attendance, and still their halls will remain empty until the relations of labor to human nature are understood and carried into practice—until the farmer and mechanic, out of their sense of privation, loss, failure, and onesidedness, shall resolve that his children be as carefully cultured as his fields; that they shall grow up in pleasant homes and be daily laying up, if not dollars and cents, "capital for after pleasures of thought and memory." Let us reason together about this

business of industrial labor, agriculture, wherein it fails to meet the higher demands of human nature, and why, in California especially, we are looking to the lower class of foreigners for the permanent tillers of American soil and laborers in the more important industries.

In Great Britain men seek to gain fortunes that they may become the owners of country homes; it adds to their dignity to be landed proprietors. The tastes of rural life are there cultivated and diffused. This has given to its farmers great social and political consideration. They have a weight in shaping the policy of Government which they do not have elsewhere, and this in spite of an aristocratic social structure which would seem far more unfavorable than that of our own country. Throughout Europe it may be asserted that the foundation of social distinction is always in the ownership of land, not held as with us for speculative purposes, but for actual and perpetual use. Something of this sentiment came over in the Mayflower and got planted on the James River, but in our long migrations across the continent it seems to have lost greatly in strength. Certainly it does not now distinguish the higher classes of society, and if we look for a genuine, hearty love for the land, we shall find it among the humbler classes of European emigrants who have been taught the value of it by their wants.

The Valley of the Rock River, in Wisconsin and Illinois, is one of almost unequaled fertility, and within my own remembrance has been twice colonized—first, by settlers from New York and New England, the advance of the wave which spent itself so largely in Michigan; and secondly, by Germans and Scandinavians. The first came in and took up extensive tracts of land, which they cropped year after year with wheat, burning their straw, and returning nothing to the soil. They cut down the spare timber of the openings, and the climate not being favorable for fruit growing, left nothing in its place. By the time their lands were well fenced, comfortable houses and barns erected, they discovered that the crops were not as heavy as formerly; there were more frequent droughts, more "chinch bugs;" many of the pioneers sold out and moved to Missouri, Kansas, or the Pacific Coast. Meanwhile the hardy Norwegian and German emigrants, who, coming later, had taken up the less desirable sections of wild land—saving, in European fashion, every scrap of manure, planting trees and vines, and settling more in communities, have been able in many cases to buy up these improved homesteads, until in some locations the entire nationality of a district has been changed—certainly not for the worse, if the accelerated increase of the population and value of the land is considered. Wisconsin, Iowa, and Minnesota, and more lately, Missouri, have gained immensely in gaining this home-making element.

RESPECT FOR THE SOIL.

If it be true that there is a degeneracy of sentiment in respect to the intrinsic dignity and nobleness of industrial pursuits in American youth, and that the elders seem to look to these rather as a means to some very different end than the handing down of a well-earned success to worthy successors in the same line, then let us seriously ask the question: How shall we improve in this respect, and create in this country, as there is in Europe, a higher sentiment of attachment to the soil than springs from a sordid self-interest, till paternal acres represent here, as in older lands, social standing, intelligence, leisure, and culture? I believe the only way to do this is to educate our youth—boys and girls—into a

respect for these pursuits; to provide liberally for such education, and to multiply in every possible way the social enjoyments and embellishments of rural life. We must take this social nature of man into the account and not expect our children, of the age when social attractions are the strongest, to be willing to dig and delve and endure the privations common to a former condition of things. When I remember how often the growing boy was overworked, the short time for study and recreation, the disadvantages with which he entered cultivated society, I do not wonder that the farmer's and mechanic's son turns toward other occupations, or that the ceaseless household cares of the farmer's wife, in homes where beauty has not softened the hard outlines of utility, homes without music, books, and flowers, should discourage and disgust her daughters. Men have left the farm and the shop because the refinements of life have been left out of these pursuits, and because the demand for educated men in other callings has been greater than the supply. We must change all this. We must become less greedy of money and be more craving of neighbors than of acres, and learn to apply the principles of coöperation in the purchase and use of machinery. When gambling enterprises shall no longer be sustained by public opinion or legislative enactments; when hands hardened by honest toil shall equal in social value hearts hardened by vicious indulgence; when capital shall abandon speculation and engage in diversifying our industries; when farmers can purchase and own the lands they cultivate; then shall these fertile valleys and foothills be filled with free and happy homes, and then we shall have made a beginning in the right direction.

RURAL COMMUNITIES.

In Southern California, Anaheim is a good illustration of the results of social, in contrast to isolated settlements. The rapid growth of such rural communities as that of Vineland, New Jersey, proves a genuine love for rural life when it is not purchased by the loss of social privileges. The growing tendency of city population towards suburban life, a tendency shown in the formation of our numerous homestead associations, is another proof that nature is still consistent with herself. Here horticulture, the original fine art, which weaves a web of beauty around the lowliest home, becomes the link uniting country and city. The cultivation of the small garden spot, its harvest of pure and simple pleasures, begets a longing for the wider fields and freer life of the farm. To the stranger in California, the clump of lilies blooming in mid-Winter by every cottage door, the vines wreathed around porch and window, are a more irresistible attraction than the gold of her mines or the wealth of her commerce. No social organization, however attractive, will suffice permanently to elevate our industries; this can come only through education.

BOOK FARMING.

I am aware that there is a prejudice concerning "book farming," and that mother wit and plenty of manure are, in older sections of the country, considered the great essentials of successful agriculture. That kind of farming has had its day, just as pans and rockers have had their day in mining. When you think that this science is simply the record of experience in these matters, the history of experiments and their results; when you think whether it would be gain or loss to have all the

agricultural, mechanical and horticultural journals removed, all statistical information withheld, and the transmission of the most valuable knowledge this age is gaining left to tradition, you are prepared to estimate what science has done and is doing for us. Still more, my practical friend. Go back to the implements which your grandfather, who was no fool, sir, hoed and harvested and thrashed with; buy a little wheel, and a reel, and loom, and dye tub for your wife (if you are so fortunate as to have one), and tell me what you think of the service which inventors of machinery, and improvers of varieties of plants, and discoverers sent out by our institutions to find whatever can be impressed into man's service, and newspaper men, are worth to the world. And when I meet a mechanic who points to successful men who have made lucky hits without much education, and who feels inclined to follow his calling in a mindless, empirical way—realizing none of its connections with great material and social laws, I say, "My friend, all your interests are at the mercy of men who have built up vast fortunes; secured to themselves vast monopolies; made peace and war in spite of you; burdened you with taxation; because your craft has been only handicraft. A wise foresight or self-preservation will drive you to education, if all higher motives fail."

It is true that there has been a great gulf between the abstract and practical sides of industrial pursuits (and of a good many other things also); but this is being bridged over, and I propose to show you how extensively in those countries where they are most successful and most honored. You are aware that in Prussia the Government requires that every child shall be educated; assuming that it is the right and duty of the State to protect itself from ignorance, the most fruitful source of crime, as well as crime itself. She enjoys the enviable reputation of being first among nations in this respect. All Germany, Austria, and of late Russia, are imitating her example, and act on the principle that the farmer and mechanic must have as thorough an education as the lawyer, doctor, or clergyman. To insure this, they have established special schools, with every appliance of land, buildings, and apparatus; taking students from the higher classes of the public schools or otherwise, and training them for their pursuits as superintendents, overseers, or laborers. A description of one which has served for a model to the rest of Europe will suffice for all.

A MODEL SCHOOL.

The Royal Land and Forest Academy of Wurtemburg is situated at Hohenheim, a few miles from Stuttgart. You will find there a large farm adjoining a Government forest of five thousand acres (these practical Germans know the importance of taking care of and cultivating trees); about twenty acres, divided into one hundred plats, are used for experimental purposes, where all questions based upon soils and their preparation, methods of culture of new plants, are tested; a botanical garden, covering several acres, exhibiting all the varieties of plants which can be grown in that climate; there is a beet sugar factory, a brewery, a distillery, a starch factory, a vinegar factory, a malting and fruit growing establishment, a silkworm establishment, and machine shops where agricultural implements are made and mended; this department being expected to furnish the rest of Germany with the best models. All the studies are pursued in connection with actual practice in the field and forest, and embrace the general principles of agriculture,

composition and quality of soils, special plant culture, meadow culture, grape, hop, and tobacco culture, fruit culture, vegetable culture, breeding of domestic animals in general, horses, cattle, sheep and smaller animals, silkworm culture, bee culture, dairying, and practical farm business. Parallel with this practical instruction, there is carried along through the course of study arithmetic and algebra, book-keeping, a knowledge of the laws and principles of taxation, physics, general and agricultural chemistry, geology, vegetable physiology and zoölogy, veterinary science, and study of forest trees and their uses. There you will find in the highest departments sons of the gentry, fitting themselves for the general management of estates; ambitious young men from the middle classes, fitting themselves for stewards; and lower down, the sons of peasants, between the ages of fourteen and eighteen, who wish to become familiar with the routine of farm work, and who spend three or four hours in study and the rest in actual labor. Any one can have instruction in the special subjects taught. Besides, there is a course of three weeks of public school vacation, in which common school teachers are posted up in the general principles of agriculture—an example worthy of imitation.

WHAT EUROPEAN GOVERNMENTS ARE DOING.

Nor is this all that those Governments are doing for this branch of industry. Scattered around in various neighborhoods are what are called experimental stations, where twelve to twenty acres are divided into small sections for experiments in fertilizers, rotation of crops, with a chemical laboratory and professor attached, and accommodations for animals, that questions of breeding, feeding, and fattening may be settled. These are nurseries for professors in the secondary schools, and are supported by Government. Equally thorough and comprehensive are the "building schools" of Prussia. At Holzminden, one of these has five hundred pupils; and at Neinberg, in Hanoverian Prussia, is one of the same grade for machinists and millwrights, masons, carpenters and joiners, cabinet makers and locksmiths. France, before the war, had taken the lead in technical education. There was hardly a town which had not its school of design; and even in Great Britain, from ninety thousand to one hundred thousand pupils are annually receiving this kind of instruction.

But it is from Russia, who has been making such immense advances in developing all her resources, that we might draw the most striking example for imitation. In eighteen hundred and fifty-six she founded the Imperial Agricultural Institute at Gorigoritz, embracing primary, intermediate, and superior departments. Then rapidly followed the creation of numerous establishments for the production of silk, with departments for instruction in the art; schools of horticulture, farm schools, model farms, special schools for the culture of flax, all distributed with a liberality almost profuse over the vast territory of the Empire, according to the nature of the soil and climate, and the habits and needs of the people. Then followed in quick succession the great agricultural museum at St. Petersburg, with numerous smaller ones in various parts of the country; schools in Bessarabia, in Caucasia, and last of all, the great Academy of Agriculture and Forestry near Moscow, to which the Government makes an annual appropriation of one hundred thousand dollars. In Caucasia the tuition is not only made free, but small incomes are secured to meet the expenses of students. At Tiflis they have a school for teaching the

applications of science to horticulture, arboriculture, bee, vine, and silk culture, where they give board, lodging, clothing, and books to a limited number of pupils, with forty dollars for the first year, sixty-four dollars for the second, seventy-two dollars for the third, and eighty dollars for the fourth and last year; and all this does not adequately illustrate the spirit and energy with which the Government is pushing forward the noble work of educating the agricultural classes. Nor is she doing less for her schools of arts and trades. The Emperor Alexander has given the most careful attention to the training of mechanicians and technologists, and to the furnishing of workshops and laboratories where these are taught; one hundred thousand dollars is expended annually for a school of this kind at Moscow, where fourteen professors impart theoretical instruction, with a still greater number of practical mechanics to oversee the foundries, forges, lathes for wood and metals, cutting machines, and trip-hammers, which earn an additional sum of forty thousand dollars for the support of the institution.

I might fill pages with the details of what the Continental States of Europe are doing in this direction, drawn, not from government reports, but from that of our own Commissioner to the Paris Exposition in eighteen hundred and sixty-eight, the accomplished Secretary of the Wisconsin Agricultural Society, who has no superior in zeal or in knowledge of either agriculture or education.

WESTWARD PROGRESS.

Not only eastward, but westward, do we see the same large policy toward the uplifting and enlightenment of industry. The ancient empire of Japan has called from our Bureau of Agriculture its efficient head, at a salary of twenty thousand dollars and his expenses (equal to the salary of the President of the United States). It has secured the services of four other principal officers of the Bureau, and made the most munificent provisions for the success of their work. This, in a country which already knows how to make its limited territory feed a larger population than is done on any equal area on the habitable globe. Nothing was done worthy of us as a nation until Congress, by the Act of July second, eighteen hundred and sixty-two, gave to each of the States the means of founding (not of sustaining) an institution of this class. The amount of benefit each will receive depends entirely upon the intelligent administration of the fund thence derived, the good faith in which the spirit of the Act is carried out, and the hearty coöperation of the people. The object of the grant was, without a doubt, to make more farmers and mechanics, and not, as has been assumed in some places, to educate the sons of farmers and mechanics. Were the latter all that was contemplated it would be right to hitch an agricultural professor or two to some existing college feeder of the professions, and take the income of the grant as a quid pro quo; but I know of no reason why Congress should educate your son more than your doctor's son; though I see a very good reason for her establishing great manufactories of intelligent industry. And this she has aimed to do, and to her credit, be it said, she accomplished her part of the work in the darkest hour of her struggle to preserve the national existence.

The proceeds from the sale of the lands thus donated by Congress have not yet been sufficient to put any of the institutions, founded upon or assisted by the grant, in full working order. The Empire State, having the largest representation, got the lion's share, and had a citizen

rich and public-spirited enough to add to the endowment five hundred and fifty thousand dollars cash, thus relieving the necessity for an immediate sale of the lands, which, carefully located and selected under his supervision, exceed in value at the present time two and a half millions of dollars. Ezra Cornell has thus founded an institution, where, to use his own language, "any person can receive instruction in any study," a college for the whole people.

CALIFORNIA AND THE UNIVERSITY.

The State of California, accepting her share of the nation's gift, has, by a wise legislation, made it the foundation of the colleges of her State University. The University completes the State educational system, and is the crown and summit of that noble edifice of free instruction, which guarantees to every child the general culture and special training necessary to energize and economize, to lighten and enlighten all labor, until the measure of service shall become the measure of greatness. This is as it should be, but it is not for the interest of California, it is not for the interest of her farmers and mechanics, that the matter should stop here. There are colleges enough for general culture; every denomination has its own where the common legacy of literature and science is received through some one of the many colored theological lenses, and of whose graduates it is estimated that not more than one per cent ever fill the industrial ranks. West of the Rocky Mountains there was not one industrial college to take your children from the public schools, carry them forward so that every step may tell upon their life business, and at the same time show them its wide relations to other pursuits and to the public welfare, thus fitting them for citizenship. Nor was there until October third, eighteen hundred and seventy, in all this broad land a single school, or college, or university adapted for the suitable training of farmers' and mechanics' wives. I am ashamed that in matters of education we have so long behaved as if it "were better for man to be alone in his higher life," condemning him to an intellectual celibacy. Perhaps this accounts for the unproductiveness and unprofitableness of so much of his work. But from whatever other walk of life we may exclude woman, she is as indispensable to the last as she was to the first farmer. And if ever toil and care lose their wrinkles, and labor is ennobled and sanctified, it will be through her help and ministry. The higher education will never be complete until the science of housewifery is as thoroughly taught as the science of husbandry.

It affords me great pleasure to add in this connection that our State University now joins hands with all the great progressive institutions of the world in saying to the daughters, as well as the sons of California, "any person may find instruction here in any study." No sooner had the Regents put the institution in working order and fully organized its courses of instruction than they welcomed the first young lady applicants, and that, too, without a dissenting voice.

The University of California proposes to furnish all the youth of the State with a theoretical education leading toward industrial pursuits, and to exhibit its practical application to the culture of our varied products, and the development of our mineral wealth, and makes this education forever free. It proposes to gather, at convenient seasons, those interested in special cultures for mutual instruction and encouragement;

just as necessary a work as is accomplished by Teachers' Institutes for the public schools. It proposes to furnish the facilities for all needful experiments; to be the "station" where tests can be made of whatever claims attention; the repository and exponent of our progressive knowledge. It will have a complete collection of models in machinery, of seeds and woods and textile materials; its gardens and orchards, formed for instruction and not profit, will become a museum of pomology and horticulture, so classified and arranged that it may be examined and read by all. It will be the volume wherein the good and perfect gifts of a beneficent Creator to this land and people have each their appropriate pages, and every letter a type of beauty which has more than a material significance. Our climate makes the naturalization of every product useful to man practicable, at least for purposes of instruction and experiment. And the history of fruit and grain growing makes us modest in saying what man may not do under these favoring conditions of climate and soil.

I have spoken thus fully and plainly of what the University hopes to accomplish, because the realization of these hopes depends upon the people. It is a sacred and inalienable trust bequeathed to the people for their own benefit and that of future generations. They have an unquestioned right to demand that it shall primarily be adapted to popular needs, that its course of instruction shall be arranged to meet, as fully as possible, the wants of the greatest number of our citizens. The farmers, mechanics, miners, and teachers of California have a right to ask that this bequest shall aid them in securing such educational advantages as shall fit them for their pursuits in life, and which, by an infusion of intelligence and power, shall elevate these pursuits to a social dignity commensurate with their value.

The University will be all that I have promised and more, if the people to whom it belongs, through their representatives, cherish and sustain it. Our schools are the highwater mark of our civilization—this school will be the highwater mark of your estimation of the value of industrial education.

If the people determine that their children shall first be put in possession of all their faculties, because they need the full power of manhood and womanhood as much in one pursuit as in another, it will be done. If the people see that the school is the only place where the foreign elements which make up our political body can be digested, assimilated, and Americanized, they will see the necessity for the largest and most generous provision for every department of public education.

Europe has been pouring a flood of immigration upon us from her poorer classes, compensating herself with the flower of our youth, to whom she offers superior advantages of education, with our scholars and capitalists, to whom she offers the accumulated gains of centuries of culture, where money has not been the only object of pursuit, and where men are content with slower and more moderate fortunes.

It is not extravagant to place agriculture at the head of industrial callings; it holds this place in the oldest scriptures, the oldest literature, and mythology. And such it is destined to become more and more as science introduces new variations into the songs of labor, and as education lifts the desires and aspirations of men out of materialism towards the gratification of higher wants.

FIG CULTURE.

BY I. N. HOAG.

The fig is the most delicious and healthy fruit known in the world. It requires a tropical or semi-tropical climate. It flourishes well in most all parts of California, producing and maturing two crops of fruit each season. The first crop grows on the last grown wood of the previous season. Having started to form in the Fall, the embryo fruit is checked by the first frost or cold weather, and remains dormant until the return of warm weather in the Spring. The small figs are then seen swelling before the leaves make their appearance on the trees.

With us this crop ripens in the forepart of July, and the fruit is generally larger than the next or Summer crop, though not usually so numerous. We have both the common blue or black fig and the brown *ischa*. The latter, when ripe, is of a greenish brown color, and we have had them average a quarter of a pound apiece as they were picked from the tree. We think this the most delicious kind of figs we ever saw. While it is very rich and melts in the mouth like a delicate peach, it is entirely free from that sickish taste always present in the blue or black varieties. While we have heard many persons say they did not like the fig because it was too rich, we believe we never saw one who did not like the brown *ischa* on first taste.

DRYING AND PRESERVING FIGS.

Figs have not heretofore been properly utilized in this State, for the reason that our people have not understood the proper method of drying or preserving them. Dried fruit generally, such as apples, peaches, plums, etc., are cooked before eating, and however thoroughly or hard they may have been dried the cooking softens them up and brings out the original flavor. Not so with the fig. This fruit is best uncooked, to eat as a dessert, and in preparing it for this purpose arises the difficulty.

It will not do to dry the fig to a crisp, as we do other fruit, for that renders it tasteless and useless. The drying process must proceed to a certain point and then must be checked and the fruit preserved for use. In other words, the water must be so far evaporated that the sugar in the fruit itself will preserve it or prevent decay. To determine exactly when the drying process should be checked requires judgment and experience, which can only be attained by actual practice.

Another great difficulty has to be overcome—to prevent the fruit when packed away from becoming wormy. Flies and other insects are very fond of figs when drying, and will lay their eggs in the cracks of the skins, and unless these eggs are killed your fruit will be destroyed and your labor lost. After a number of unsuccessful efforts to dry or

preserve figs—running through so many years—we were furnished with the following recipe, which we have followed since with satisfactory success:

"Pick the figs when thoroughly ripe, dry them on racks as you would other fruit, in the sun, for four or five days—or until the water they contain is thoroughly evaporated. If there is any dew, cover them nights. Then place them in a vessel perforated with holes, like a cullender, and dip them into boiling water for about one minute, after which again expose to the sun until the surface water has been evaporated. Then lay them into wooden, tin, earthen or other vessels and press closely, so as to exclude the air, and cover securely."

In this way we have preserved figs so that they were equal to the best imported. We would recommend all who raise this fruit to try the experiment. The scalding answers the double purpose of killing all insect eggs and softening the skin of the fruit so that the sugar will come to the surface, as may be seen on the imported figs.

Our experience, however, teaches us that it is better to allow the fruit, after being taken from the scalding water and dried one day in the sun, to be packed loosely in a fly-tight sack, and there to remain say a week or ten days—examining two or three times to see if they are mildewing—before packing closely in the boxes, as directed in the receipt. This causes the water more perfectly to evaporate and the fig to assume a better condition for packing, and induces the sugar to come to the surface more; giving them a more desirable appearance, and improving their keeping as well as eating qualities.

A dry warm sand is the best material on which to lay the fig for drying, as this retains the warmth accumulated in the day time well into the night, and dries the under side of the fruit as well as the upper, thus avoiding the necessity of turning them over so frequently.

THE BEST VARIETIES.

The white Smyrna fig is undoubtedly the best variety known for drying. This is the kind mostly imported from the south of Europe and the Asiatic Islands, and which generally appear on our fruit stands in small packages. These figs are generally imported in bulk, and frequently in rawhide sacks. At San Francisco, for this coast, they are taken out of these large packages and repacked nicely in small ones for retail.

We have as yet very few of the real white Smyrna fig in the State. There has been a spurious article here called by that name, and being an inferior variety, it has thrown discredit on the genuine fruit. The reason why the Smyrna fig is superior for drying consists principally in the fact of its being freer from that sickish taste so common to the blue varieties, and at the same time the skin is more delicate and thinner than the brown *ischa*.

It is also a plumper fruit than the latter variety, filling out better at the seed end, which renders it less liable to receive the eggs of insects. The brown *ischa* tree is apt to bear so full that the fig does not fill out and mature well. This can be remedied by trimming in the trees well each Winter, when the sap is down in the roots, and giving the tree a plenty of moisture and a good top dressing of well rotted manure each Fall. The blue figs generally are too rich, or so much so as to have a sickish taste when eaten fresh from the tree. This taste, however, does not adhere to them when dried and cured as above directed.

Of all the fruits kept for Winter eating, the fig is the greatest luxury for eating after the meal as a dessert, or between meals. It is true it is so rich one can eat but little, yet that little affords a great degree of enjoyment to those who have formed the habit of eating them.

CULTIVATING AND PRUNING THE FIG TREE.

Fig trees want plenty of room, and do not bear crowding. If crowded, they will not bear well, and the fruit will be inferior. The trees should be planted at least forty feet apart and trained low, so that they will send out horizontal limbs or arms. These may need propping to support the crop, but it will pay much better to train them in this way than to let the top run up high. The fruit will grow larger, mature better, and be richer.

PROFITS OF FIG CULTURE.

There is no doubt but, if properly managed, the culture and preserving of figs can be made in this State one of the *most* profitable branches of fruit culture.

The trees commence bearing young, and are among the most prolific fruit-bearing trees known. After the trees are say eight or ten years old, the annual crop can easily be made to yield ten dollars on an average. The writer has known them to do much better than this in this State.

SILK CULTURE.

THE COCOONERY.

The building to be used as a cocoonery should be regulated as to size so as to accommodate the number of worms to be fed in it. One ounce of eggs is said to contain from thirty thousand to forty thousand; but we think thirty thousand as many as will on an average hatch from the ounce. The smaller trivoltine or bivoltine kinds may contain more than this number, but we think the larger annual kinds will fall short of it. Taking thirty thousand as a basis, we may easily determine the space required to feed the worms from any given number of ounces of eggs. One hundred and fifty worms of full age or growth should have at least one square foot of shelf or table room, and one ounce will therefore require two hundred square feet, and this increased in proportion as the number of ounces of eggs to hatch is increased. No extra building need be provided for a cocoonery if there is a barn or other building on the place that can be spared for use during the Summer season. The shelving can be so put up that it can be taken down and laid away, and so kept from year to year. It is said that in many portions of Spain and in other countries sheep hoods are used as cocooneries, and that the smell of old manure is believed to be of no detriment to the health of the worms, but rather a benefit. So a horse barn or a hay barn can be cleaned out and used without danger to the worms.

VENTILATION AND TEMPERATURE.

One important matter in fixing up a cocoonery is to provide the means for plenty of ventilation. There should be an opening at the highest point to let the bad air escape, and openings at the bottom to let in fresh and cool air; and these ventilations should be fixed so as to regulate the circulation of air at pleasure. There should also be some handy way to wet down the floor (and this may be either boards or well packed earth) in hot, dry, and still days. The evaporation of water judiciously used may be made to keep down the heat two or three degrees in the building below what it would be without the use of water.

Though this is one of the most even or uniform climates in the world, yet the changes of temperature between the nights and days, especially in the open valleys and in the Summer season, are greater than in many other countries. Indeed, this regular daily change of temperature is one of the greatest difficulties in our opinion with which our silkgrowers have to contend. With our generally even temperature, if we could dispense with this daily change our climate would be perfect. In this respect the foothills have a great advantage over the large open valleys.

To counteract this difficulty many propose building brick or adobe cocooneries. This expense is unnecessary; nor do we believe a brick building good for the worms. The atmosphere in a thick-walled brick

building accumulates too much chilling dampness, which is as detrimental as the changes of the temperature. A double wooden wall, with a false roof, would secure all the advantages and be liable to none of the objections to brick. But the same object can be much more cheaply and as effectually secured by covering the sides and roof of the cocoonery with tules. The tule makes a covering of the best non-conducting properties. Neither the sun, the wind, nor the dampness of a rainy day will penetrate a wall of tule a foot thick. The southern and western sides of the building and the roof only need be covered. The sun should always be allowed to strike the east side of the building early in the morning. It will shorten the time necessary to carry the worms through to cocoons from two to three days, and give them more certain health and better results. Two men can cut tule and cover a building fifty feet square, if they be handy, in two or three days. We speak in reference to this kind of covering from experience.

ARTIFICIAL HEATING.

With respect to artificial heat in cocooneries there are many opinions. In this dry climate we all know that the degrees of heat and cold are not so sensibly felt by the animal system as in a more damp climate. The dry air is a poor conductor of heat; but a damp atmosphere, on the contrary, becomes a good conductor, and hence in a damp climate we feel the changes of heat and cold much more readily. So with the silkworm. We should take these facts into consideration when determining the question of artificial heat for our cocooneries.

We think it may be well to have the facilities for heating at hand, but use them only sparingly. We would prefer that the thermometer should not fall below sixty nor rise above eighty degrees in the cocoonery. If it could be kept at the mean of seventy degrees it would be better. If the thermometer falls below sixty degrees and remains any length of time it may be best to use a little fire. But if it only gets down to that figure in the latter part of the night to rise at the approach of the sun, we would not start the fire. The Chinese on such occasions use a quick charcoal fire, which they carry through the building in a furnace. Heating by an open fire or blaze, as in a fireplace, is much better than by a close stove.

HATCHING THE EGGS.

Silkworm eggs will not hatch as a general thing with the thermometer below forty-five degrees. We say generally, because the bivoltines will hatch at a considerably lower temperature than annuals, and Japanese annuals will hatch at a lower temperature than French annuals. If your eggs have been kept in a place below forty-five degrees and you wish to have them ready for hatching in about ten days, change them to a locality where the temperature remains at about fifty degrees, and in a day or two increase the temperature to about sixty degrees, and then up to seventy, and keep it at this point until they begin to hatch.

Two or three days before hatching you will notice the eggs changing color from a brownish slate to a grayish blue, and the day before hatching to quite a light blue. The worms hatch from six to ten o'clock in the morning, and when you see the little fellows coming out, cut up some tender leaves in narrow strips and lay them around the edge of the paper to keep them from crawling off; also, some through the center. As the worms get out of the eggs, they start immediately for the leaves and begin to eat.

At about ten o'clock take hold of the strips of leaves carefully and lay them close together on a clean paper upon which you intend to feed them. It is better that the worms be pretty thick when small—so thick that the leaves upon which they rest will look black with them. When you have thus moved all the worms from the eggs in this manner, cut up some tender leaves very fine and sprinkle them over the worms. They will immediately leave the dry strips and go for the fresh cut leaves. Mark the worms, or the paper containing them, the day of the month, and feed them a little once in about five hours during the day-time, and if the nights are sufficiently warm, so that they continue to eat all night, keep the feeding up all night; but if the nights are cool, let them miss one feeding in the middle of the night, and then again at four o'clock.

Repeat the process of taking the worms from the eggs each day for about four days, and then throw away those that have not hatched, as they will not probably be very good after that. Be very careful to keep each day's hatching by itself, and keep the papers on which you place them separate, so they will not mix, as this will save a great deal of trouble in the future changes of the worm. Keep up the feeding with finely cut leaves each four hours, being careful not to feed them much more than they will eat until the worms are four days old.

FIRST MOLTING.

At this age their heads and the foreparts of the body will be a grayish color, and if the temperature has been kept up to about seventy degrees they will probably begin to lose their appetites, preparatory to going to sleep, but if the temperature has been a little lower than seventy they may eat, on the fourth day, more ravenously than on any previous day, and their sleepy time may be delayed until the fifth day, or even to the sixth. When they stop eating, stop feeding; as, if you continue to feed them, you will bury them up with cold, damp leaves, and thus lose many of them. They will sleep from twenty-four to thirty-six hours, and sometimes forty-eight hours. In this time their bodies shrink and the skin separates from the little black cap that covers the head, the cap falls off, and the worm wakes up and crawls out of his skin. This is called molting. When they have thus molted and waked up they are very hungry, but don't feed them any till all the worms on the paper have molted. Be very particular about this, so as to keep them all of the same size, and so that when they go to sleep the next time, which they will do again in about five or six days, all will sleep and wake at the same time.

By being very careful to keep the worms of the same day's hatching separate, and thus keeping each day's hatching uniform in size, and putting them all to sleep at the same time, before each molting, much work is saved, and the worms will do much better all through their lives. We should have mentioned that, as the worm approaches the time for going to sleep, it changes its color, always looking a yellowish sickly color at that time; and when it fully stops eating, it fastens itself to a piece of a leaf, and seems to be stiff and almost lifeless. In this condition they should not be moved, or fed, or disturbed in any way, but left entirely alone. When going to sleep, also, many of them get down under the surface leaves, so that you can see but few of them on the top. When they have molted, their color is changed, and they appear on the surface again and move about in search of food.

We had waited from twenty-four to forty-eight hours, and had seen them reappear on the surface of the leaves very much brighter and lighter colored, and anxiously moving about over and under each other, and at the slightest movement near them, sticking up their heads and swinging back and forth as if trying to reach something. And when we noticed them more closely, we observed that all the little fine black hairs that covered their tiny bodies before they went to sleep, had disappeared. These several changes are indications that the first age of the worm had passed—that they had shed their skins for the first time; or in other words, that they had passed the first molting and had entered upon the

SECOND AGE.

That we may be more certainly understood by new beginners, for it is for their instruction that we write, we will state here that the silkworm passes through five stages or ages from the time of hatching to the time of making its cocoon. The first age is from hatching to the first molting, and, under favorable circumstances—that is, in uniform warm weather and good feeding and care—the time of this age is from five to six days. The second age is from the first to second molting—a period of from four to six days. The third age is from the second to third molting—from five to six days. The fourth, from third to fourth molting—from six to seven days. The fifth, from fourth molting to spinning cocoons—from eight to ten days.

In good weather, all these changes are passed in this State in about thirty-two days. We have had the Japanese bivoltines make cocoons in twenty-eight days, and we have known the annuals to occupy forty days, when the weather was unfavorable.

In China, the Chinamen say that the worms frequently make cocoons twenty days old. The nights there are much warmer than here, and the worms eat as rapidly in the night as in the daytime, and grow much more rapidly and pass through the moltings more quickly than here, where the nights are cool.

We will give here a description of the appearances and changes of the worm as it approaches all the moltings except the first. The first indication is that the appetite begins gradually to fail, and the worms seem inclined to rest or lay quiet. When fed they will stir up and crawl on the fresh leaves and eat a little, but soon leave off eating and crawl over the food—not in search of something to eat but for a spot for rest, and some leaf or stem to which to attach itself for a long quiet sleep. When these signs are noticed, feed very lightly and with very finely cut leaves, so as to let the bed of leaves become dry and in good condition for the worms to sleep on, as they will pass through the molting much more successfully on a dry bed than on a cold, wet one. When the worms are asleep they must not be fed at all.

At these molting times is the greatest danger of trouble. If the bed of leaves is too thick and damp the worms are a long time in molting, and they are apt to come up from molting very unevenly as to time and to appear weak and feeble. This latter condition may be known by the great amount of fine web spun by the worms on the surface of the bed as they wake up and begin to move about. When you see this it is best to remove them from the old bed as soon as possible, even though you leave some still asleep to be thrown away. If, however, the bed is in good order and dry, the worms will wake up evenly, appear strong and vigorous and hungry, all other things being well. If the bed of leaves

turn black under the surface at any time it is an indication that they are heating or fermenting, and the worms should be got off of that bed as soon as possible.

CHANGING AND DIVIDING.

We have as yet said nothing about changing the worms from one bed to another, so as to keep them clean, and dividing them up and spreading them out as they become too crowded by their growth.

As a general rule the worms should be changed from the old bed about every other day. The best way to do this is, at the regular time of feeding, instead of giving them their food in its usual condition, cut fine, to select some very tender soft leaves and cut them up into strips, say half an inch wide, and lay them all over each bed of worms to be changed. As the worms grow larger these strips may be cut wider, and when the worms are still large whole leaves may be used for this purpose. The worms will leave the bed of fine leaves and climb upon these strips. Now watch them, and when they are generally on the strips, and before they have eaten them so much that they will not hang together, lift these strips up carefully one by one and lay them carefully down on a clean paper. If the worms are too crowded on the old bed, and they generally will be so about every other day, put those from one paper on two or more papers. It is very important that this matter of changing and dividing be properly and most rigidly attended to.

It may be of some assistance in aiding the judgment of new beginners to observe the following directions as to the space that a certain number of worms should be made to occupy during the different ages.

For convenient reference on this subject, and to assist in determining what number of eggs should be hatched or worms fed on any given number of trees, we will state here the amount of space, say one hundred thousand worms, or those hatching from about three ounces of eggs, should occupy at the close of each age and the number of pounds of food they will consume during each age.

One hundred thousand worms should be made to occupy, at the close of the first age, about twenty square feet of surface, and they will consume during that age about twenty-five pounds of leaves. During the second age they should occupy about forty feet of surface, and will consume about seventy-five pounds of leaves. During the third age they should occupy about ninety feet of surface, and will consume two hundred and thirty pounds of leaves. During the fourth age they should occupy about two hundred and twenty-five feet of surface, and will consume six hundred and ninety-five pounds of leaves. During the fifth and last age they should occupy about five hundred square feet of surface, and will consume about five thousand nine hundred and seventy-five pounds of leaves, or six thousand nine hundred and ninety-five pounds in all.

It will be seen by the above that while the worms occupy but little space, and eat but little during the first half of their existence, during the last half they spread out very rapidly and eat very voraciously. So that while there is but little work to attend and feed them during the forepart of their lives, the work increases very rapidly during the latter. After each molting the worms may be fed once or twice before they are removed from the bed where they have deposited skins, but not more than that. The first feeding after molting should be light and of tender food, as the worms are then weak and very hungry, and if fed too much then they are apt to hurt their appetites for food when they become stronger and should have good appetites.

TREE PLANTING.

BY J. S. HARBISON, OF SACRAMENTO.

The wrong way is too often practiced. The holes are dug—some barely large enough to admit the roots—and these even are often doubled up and crowded in such a manner that a portion of them decay prematurely, and the tree is easily blown over. Others are dug and the tree planted as a fence post should be—deep, with the earth well packed around them. In this case, certain death to many varieties of trees, such as the stone fruits, locust, etc., follows. Pear, Lombardy poplar, and some other varieties, endure this style of planting and frequently do well. Of late years some variation is made in the manner of preparing the holes. For instance, they are dug about three feet in diameter and as many deep. If in hard ground (alkaline it may be), these holes are usually filled with material hauled from a distance, a quantity of manure deposited in the bottom, and sediment is used to finish the filling. If in sandy ground, it is thought best to have some clay to mix with the sand. The clay is hauled—most likely it is black adobe, or that which is as poorly adapted to the requirements of tree life as the lean, washed sediment—the holes are filled, the trees planted—some deep, some shallow—it don't make much difference which, for no very good results are ever seen to follow such unworthy practices.

It is noticeable of late years that a much larger proportion of trees planted along our streets, as well as of fruit trees in our gardens and orchards, die or grow feebly than in former years; which is not chargeable to any change in the manner of planting, but to the fact that the ground has been tramped over, destroying its life-giving qualities, or exhausted of its fertility from long cropping. While our land was new and untrodden, trees planted in the most superficial manner mostly grew and did well, and when spared the murderous trimmings that have utterly ruined so many of the fine trees that formerly graced our streets, are to-day equal in size and beauty to those grown in any city of the land, and at the same time show us what must be done to restore the pristine vigor of our soils before we can hope to attain success.

Another cause has contributed not a little to the failure of tree planting of late years. The trees have mostly been brought from distant nurseries, and for the want of proper care in packing, or the entire absence of any packing, more or less damaged before they are planted. Formerly the demand was almost entirely supplied from our local nurseries. The latter having, to a great extent, been destroyed by floods, leaves most of the nurserymen without the means and the courage necessary to start anew and compete successfully with distant commercial nurseries, with whom it is difficult to compete even where no calamities have befallen.

The right way of preparing the ground, if for field or orchard planting, is this: The whole surface should be deeply and thoroughly tilled, either with a plow or by trenching with the spade. For street planting, or where there is but a limited amount of room, the whole of the ground the length of the row, and as wide as possible, should be deeply and thoroughly pulverized, and poor clay or sand replaced with rich friable soil, such as the successful market garden is sure to have, and cultivate carefully. In short, I would have my field or border prepared as one hole holding the entire population, being careful to provide proper drainage, so that no stagnant water should come in contact with the roots of the trees. Would avoid putting any gross, unrotted manure with the filling around the roots, but instead, would use large quantities spread widely on the surface of the ground, only avoiding near contact with the tree to avoid fermentation. Such application should be made as soon as the trees are planted, but never comes amiss at any season of the year. An annual top dressing just before the rains set in, first plowing the ground, cannot be too highly recommended.

Mulching the trees, as just suggested, is the only substitute for the frequent stirring of the soil. The latter must not be entirely omitted, and particular attention to prevent weeds growing must be given at all times.

With the exception of partially hoed crops, for two or three years after planting the ground should be left vacant, in order to allow of frequent cultivation. Wheat, barley, oats, grass, etc., are highly prejudicial to the success of trees at any time, and usually prove fatal to them if grown the first or second year after planting. One crop, even, may so far injure an orchard, though in bearing, that it will never recover from the injurious effects.

EVERGREEN TREE CULTURE.

BY E. F. AIKEN, OF SACRAMENTO.

Without wishing to deduct one iota from the importance of the immediate introduction, wide dissemination, and planting of all deciduous forest trees, I will call the attention of the Club, if you please, to the consideration of similar merits of the evergreen and coniferous trees of the forest, and will confine the few remarks I have to make to four or five of the leading and, in my opinion, most valuable sorts for cultivation here.

The evergreen, we all know, is a tree that has a perpetually green and living foliage. Some varieties have upright, needle like leaves, while others have a broad and drooping foliage. The first mentioned are all of the cone-bearing family or conifers; and this name they get from the form of the fruit, which contains the seed, and not from the general habit of the tree, as some suppose. The seed of this class is the most minute and delicate of all our forest tree seeds, and it is well known that they will not grow in their natural state only under peculiar circumstances and in certain localities, where the atmosphere is humid and to that extent that the seed will not fail to germinate and the seedlings grow readily. The seedlings are found in their natural state only in the depths of the forests, in cool and shady places where the searching winds and the fierce and scalding rays of the sun cannot penetrate. The first year of their existence they are exceedingly delicate, a strong ray of sunlight or gust of wind often destroying the vitality of thousands. Hence we are taught by nature the uncertainty of successfully growing evergreen trees from seed in our dry climate. It has required years of patient toil by experienced nurserymen, using every precaution known and gathered by long experience, together with the great advantage of the humid atmosphere bordering our great lakes, to raise the seedlings successfully. They are now raised in large quantities by parties in the East who make the business a specialty, and can be imported here through the mails at so little cost as to come within the means of all.

The most extensive growers of forest tree seedlings in the United States are Robert Douglass & Son, Waukegan, Illinois, and Pinney & Lawrence, Sturgeon Bay, Wisconsin. While these evergreen seedlings can be had so cheaply from the Eastern nurserymen, I would not advise our farmers here to undertake their cultivation from seed, as I am satisfied that failure and discouragement would be the result. It is a very difficult question to decide which of the two varieties—the evergreen or the deciduous trees—is of the most importance to civilization.

The whole family of evergreens and cone-bearing trees of our forests are valuable for timber, and are used to a greater or less extent as

regards their adaptability to the different branches of mechanical business. There are very few of all the numerous branches of mechanical business but what are more or less dependent upon wood as their material for manufacturing. How much more material is used that is derived from the evergreen and cone-bearing trees as compared with that originating from deciduous trees, I will not presume to say. We all know from experience and observation that the former is vastly in excess of the latter, and I believe it would be safe to say that seven eighths of all the wood made into lumber and consumed in other ways is the product of this class of trees. The white pine, Scotch pine, red pine, and Norway spruce, which I give you, as I think, in the order of their respective merits, are without doubt the most valuable sorts of this class for extensive and general planting, retaining their foliage, as they do, through the Winter, when deciduous trees are leafless. As trees for shelter for stock on the farm, as windbrakes for our orchards, vineyards, and grain fields, or as ornaments to beautify our homes, they cannot be excelled by any and have but few equals among deciduous trees in a commercial point of value. They are easily transplanted (while young) from the nursery, and of thrifty and rapid growth, requiring much less moisture in the soil, and will flourish over a wider range of climate and accommodate themselves to a greater variety of soils than most deciduous trees. They grow well on uplands, hillsides, and on sandy and unproductive soils, and I believe are well adapted for extensive cultivation on our treeless plains throughout the State.

That these broad plains are wholly devoid of evergreen trees now is no argument against the rapid and successful growth of evergreen forests if once established by the hand of man. And I would here urge upon our farmers the necessity of making a beginning of forest tree planting, even if it be but a few hundred trees. Start them in nursery form, if not prepared to plant them otherwise; plant seeds of the black walnut and locust, cuttings of the poplar, cottonwood, and white willow, if you cannot procure seedlings of a better class of trees. They will grow and make shelter, and break winds, for the better trees to come after—but plant as many as possible of the sorts before mentioned, including the European larch. The last mentioned, though classed among the conifers, is not an evergreen, as it sheds its foliage in the Fall. It has for several years been planted more extensively in Europe than all other trees combined, and is now taking the lead of all others among the planters of the Atlantic States. Bryant says: "The evergreen larch appears to combine the qualities of growth, symmetry of form, durability of wood and adaptability to a variety of uses in a greater degree than any other timber tree of northern latitudes." Loudon says: "The rate of growth of the larch in the climate of London is from twenty to twenty-five feet in ten years, from the seed, and nearly as great on the declivities of hills and mountains in the highlands of Scotland." This is a different species from the American larch, sometimes called hackmatack and tamarack, being unquestionably superior to the latter in every respect. It does not succeed so well in a damp atmosphere, near lakes and bordering rivers. Hence we may infer that it may be well suited to the dry atmosphere and soil of our plains.

The cone-bearing family of forest trees comprise some of the most valuable kinds of timber trees known, and there is no one variety of wood that is so extensively used in the great and increasing demands of civilization as the pine. It is rightly named the "king of the evergreen forest." Immense forests of pine were formerly found throughout the

northern portion of the United States, from Maine to Oregon, but now large forests of the old growth east of the Rocky Mountains are rare. In the old State of Maine, once so famous for her vast forests of pine and great foreign lumber trade, there are to be found but few of the original growth standing, and as a substitute for pine, hemlock and spruce are now extensively used, and in nearly all of the older States the scarcity of pine is severely felt.

Arthur Bryant, in his new work on "Forest Trees," says: "The State of New York, which not many years since exported great quantities of pine lumber, now obtains a supply for home consumption from abroad, and it may be safely estimated that two thirds of the full grown timber in Northern Illinois has been destroyed within the past eighteen years." With the ravages of fires that have recently swept through the timbered portions of our Northwestern States, and the increased demand for lumber consequent upon the rapid increase of population, the home supply for the future demands of civilization will soon be practically exhausted. Large tracts of the best timbered lands of our own State within a few years past have been monopolized by stock companies or speculators and passed into the hands of railroad corporations as subsidies; and this concentration of our great forests of timber in the hands of men who have no consideration but the mighty dollar to be coined out of them, must surely and speedily enhance the price of lumber. It is to be hoped there will be, during the present session of the Legislature, some systematic plan devised which will bring about extensive and wide-spread experiments in the different methods of forest tree culture, in all its different branches and forms, throughout the State. There is no question concerning our future prosperity as a State which will come before it more important or more necessary for its immediate action and fostering care than this. No efforts of private individuals will serve to so forcibly impress upon those engaged in agricultural pursuits the importance of extensively planting out forest trees as to have our Legislature take some action worthy of an interest of such vast importance to our State.

GRAPES FOR SPECIAL PURPOSES.

BY W. S. MANLOVE.

The subject of this essay, "Grapes for Special Purposes," opens a wide field for research and discussion, and one that I feel much reluctance in entering upon, knowing, as you and I do, that there is a great diversity of opinion on the adaptability of certain varieties to specific purposes. My only object in selecting this subject is the hope of contributing some useful information to my brother members—information practically acquired during the last twelve years, at a cost of much time, labor, and considerable pecuniary outlay. Starting in the business of grape raising without any knowledge of the cultivation of the vine, or of the best varieties to select from, I have found it required much care and attention, holding fast to those which proved themselves worthy, discarding others which have proved themselves worthless, although highly recommended to me by other parties. Just here I would say, that on the receipt of a variety with which I am unacquainted, I graft it on a vigorous stock, and thus test it much sooner than by the ordinary method of raising the vine from the cutting. I am aware that some varieties do not do so well when grafted, but in my experience there are but a few, and these comparatively worthless. In selecting the varieties to be discussed, the white Muscat of Alexandria heads the list. This I consider the *ne plus ultra* of the grape family. It is the most delicious, finely flavored grape that is cultivated in this State. Its large size, delicious flavor, and abundance of sugar or saccharine matter when fully ripe, render it, and deservedly so, the best table grape we have. On account of its firm, fleshy pulp, it is specially adapted to raisin making; no other grape approaching it in this respect. Indeed, Messrs. Thompson and Hyatt consider this the same as the Malaga grape, from which the famed raisins of commerce are produced. As a wine grape it is highly esteemed; making a sweet, highly-flavored dessert wine.

As a grape for distillation, when fully ripe, it is thought by those who have tested it to be superior to every other variety for brandy, imparting its musky-perfumed flavor to the product of the still. This variety of grape seems to adapt itself to almost every variety of soil and climate in our State. Therefore, it is recommended as a valuable addition to all vineyards as a table grape, and as peculiarly adapted to the manufacture of raisins, wine, and brandy, and for transportation to our transmontane markets.

The Black Hamburg, for general cultivation, according to my experience, is only second to the Muscat. The Hamburg is easily propagated, grows thrifty, is free from disease except on lowlands, and is one of the most prolific and certain bearers of any that I have grown. It is the

best purple grape in the State, unsurpassed as a table grape, a good shipper, very rich in sugar when fully ripe, making a good quality of wine, and a large percentage of alcohol on distillation. Combining these good qualities, it is specially sought after by growers of the vine. To those who design growing grapes for market either at home or abroad, I would say there is no grape that bears transportation so well as the Red Lombardy or Flame Tokay. Being so well known it is needless to more particularly describe it. As regards its carrying qualities, it will carry from here to an Eastern market, when properly packed and handled, in as good condition as when picked from the vine. In proof of its being specially fitted for transportation to Eastern markets, I will state that in the month of November last I saw it stated in the *Hearth and Home*, a paper published by Orange Judd & Co., of New York City, that a carload of pears and Tokay grapes had arrived from California a few days before, the grapes being in good order and wholesaling at thirty-seven and a half cents per pound. The Flame Tokay is said by experienced wine makers to be a good wine grape, or to be valuable to mix with other varieties. The three varieties named I have selected from about thirty which I have tested. True, some of the other sorts are good grapes—such as the Blue Malvoise, Black Malaga, and others—but possessed of no distinctive qualities entitling them to be classed with the three first mentioned. For a wine grape alone there is no question in my mind but that the White Reisling is one of the most valuable; but the great objection to it is that it produces a very small amount of fruit—mine not averaging more than five or six pounds to the vine, although growing on the best land in the vineyard, Hamburgs yielding thirty to forty pounds in the adjoining rows. In presenting my views to the Club, as I have already stated, there is much in them that is not applicable to every location, and my advice to any one engaging in grape culture would be to find out what varieties do best in their locality and stick to them until experience shall demonstrate other more valuable varieties to cultivate. In conclusion, I would advise all persons who contemplate planting vineyards to embrace the present opportunity, as this is the most favorable season there has been for four or five years. Cuttings planted this season would insure a good stand and a vigorous growth—two things well worthy of consideration in the planting of a vineyard.

ALKALI SOILS.

BY ROBERT WILLIAMSON.

In presenting this essay it will be my object to suggest some practical mode of neutralizing or extracting from our soil the substance called alkali, without discussing its chemical properties. Indeed, I am not aware that any chemical analysis has ever been made of soils impregnated with this alkali. It is evident, however, that its principal ingredient is potash, with a mixture of soda and salt. I am of the opinion that a limited amount of this alkali adds to the fertility of our soil. I think that the exceeding productiveness of the soil in California is attributable in part to the presence in limited quantities of this article; but, unfortunately, a great portion of our land—especially our low, flat lands—is too strongly impregnated with it. In such cases it becomes a nuisance rather than a benefit. It may seem strange to say that a good fertilizer could become detrimental to the fertility of the soil. It is the quantity, and not the quality, that produces the injury. Lime is an excellent fertilizer, and yet too much lime is certain death to vegetation, and I believe the same to be true with reference to alkali.

When we inquire into the source or origin of alkali, then we enter into the field of speculation where each man entertains his own peculiar views. There are various theories respecting its origin. My view is, that it is in veins or strata deep down in the earth, the same as salt veins, coal, or iron, or any other minerals; and I believe, like many other minerals, it has been brought near the surface by volcanic eruptions. Minerals of all kinds are found most plentiful in countries that have been thrown up by these volcanic eruptions; and this is especially true with reference to this alkali, as it is seldom, if ever, found in countries that have not been heaved up, and countries that have been the worst torn up by these eruptions invariably exhibit the most alkali. Now, in proof that it lies in veins, we often find springs of water strongly impregnated with it—so strong that the water cannot be used at all—while in the immediate vicinity may be found another spring, coming of course from another direction, which will be entirely free from any traces of alkali. The same is true of wells; one well may be good, pure water, and another well in the same neighborhood, or even in the same field, may be strongly alkalied. As to how it gets to the surface, my theory is as above indicated—that it is thrown up to or near the surface by these volcanic eruptions; then it becomes subject to the action of water. It is washed from the mountains, hills, and high plain land, and settles on the low lands, especially in basin-shaped places, where the water stands. In such places we find almost invariably the strongest alkali beds. Hence we often see alkali flats and alkali lakes on the plains. These alkali beds present the appearance of once having been

lakes, and no doubt they were, and the water from adjoining hills and plains ran into them and carried the alkali with it. As proof that water carries alkali with it, we seldom ever find alkali on the margin of a running stream; but go back from the stream till you strike the land not necessarily drained by the stream, and there you will find the alkali, if the water does not leach it out of the soil and carry it away with it. Why then is not alkali found on the banks of the stream as well as back from it?

But again, to be more practical, you may take earth that is so strongly impregnated with it that it will taste almost as strong as potash; take that same dirt, pulverize it, put in an old-fashioned ash hopper, and continue to pour pure water on it, and you will soon leach all the alkali out of the soil thus treated. But we are asked how it is that in some cases it will be found on the surface, and dig down one or two feet and no alkali is to be found. This may be accounted for in two ways. One is, that it might have been brought by water from elsewhere and left on the surface. The other is, that it was forced up from below by seepage water and attraction of the sun, till it reached the surface. There it comes in contact with a heavy soil of adobe character, unites with this soil, congeals, and forms a hard substance almost impervious to water, at the same time forming a source of attraction to draw the alkali from a loose, sandy subsoil. Hence the apparent freeness of the subsoil from alkali. My observations have been that a sandy surface, with a loose subsoil, will never be troubled much with alkali, because as the water sinks down it carries the alkali with it.

Again, we are asked why it appears in the Summer and Fall, when the surface is dry. We answer, it has either been retained there by the hard surface referred to above, or is drawn up by the same attraction that draws the moisture from below in the Summer. Now to sum up the whole theory. Believing as I do that water will carry alkali with it, I necessarily believe that thorough draining is the only practical way of reclaiming alkalied lands; and it as necessarily follows that land that cannot be thoroughly drained cannot be reclaimed. We may neutralize the alkali to a certain extent by thorough cultivation, by heavy manuring, or by cropping it to beets. Beets will succeed on alkalied land better than any other crop I know of, and no doubt absorb and extract a considerable portion of the alkali; and if the alkali exists only on the surface, with no substrata of it below, nor no water to carry it on again, you might get your land comparatively reclaimed by a succession of beet crops. But the same cause that brought the alkali to the surface once will do it again, unless the connection is broken. This, I think, can only be done by drains. I would suggest underground drains. These, the most expensive at the start, will be much the cheapest in the end, as they more thoroughly drain, and at the same time give a free use of the land. It matters not whether the rain washes the alkali down, or the seepage forces it up. In either case the ditch will carry it off. These same drains, if properly arranged, may be used in the Summer for irrigating purposes; and here let me remark, that it will not require more than one fourth the water to irrigate in this way that it requires if put on the surface in the usual way. I think the best and cheapest material for these drains is the earthern pipe, called tiling pipe. Clark, who keeps the pottery near Sutter's Fort, makes it all sizes, and in large quantities. A sample of the remarkable effect of underground irrigation may be seen in his gardens. And now, in conclusion, permit me to say that if I have, in this humble essay, dropped any hints that will be of use to the public, my object will be accomplished.

UNDERGROUND IRRIGATION.

BY I. N. HOAG.

The subject of irrigation has very naturally attracted a great deal of attention during the past year, in consequence of the great scarcity of the natural supply of water.

Schemes for irrigating large tracts of country in many portions of the State have been projected, and some are in a forward state of completion. Much good will, undoubtedly, result from the successful operation of these enterprises. But our object now is to call attention to a plan for underground irrigation, which we think most admirably adapted to irrigating vegetable and kitchen gardens, and small orchards and nurseries, particularly on the dry prairie or grain districts of our State.

Every farmer, gardener, or nurseryman will at once see and comprehend the reasons why water applied, say one foot below the surface, will do more good to growing plants of all kinds than if applied on the surface of the soil. These reasons may be stated briefly as follows:

First—It induces the roots to work downward to meet it, thus giving them a deeper and better hold on the soil, and enabling them to secure a greater amount of the plant-sustaining elements.

Second—Water thus applied softens up and loosens the whole ground, and does not, like water applied to the surface, induce a crust to form on the surface.

Third—Much less water will be needed, if applied underground, than if applied on the surface, because the evaporation will be less.

Fourth—There can be no danger of the sun scalding plants thus irrigated, while this is the great drawback or danger attending surface irrigation in the Summer.

NATURAL EXAMPLES.

For a striking illustration of natural underground irrigation, we would refer to the lands about the confluence of the Sacramento and San Joaquin rivers, especially to Sherman and Twitchell Islands. At high tide the water in the rivers or sloughs surrounding these islands is as high, or higher, than the surface of the soil, even in the Summer season, but at low tide it is from three to four feet below the surface. Thus the soil is kept constantly irrigated from below. To this fact are these lands indebted for their great productiveness and natural advantages. On these lands the seed time and harvest are coëxistant and constant the year through. All varieties of vegetable seed may be planted here in the middle of Summer, and they will come forward and mature as rapidly and perfectly as those planted in the Spring.

Thus is given a double value and a double productiveness to these lands. The water becomes a constant fertilizer to the land and stimulant to the growth of the plants. Now if it was in the power of man to place all the lands in this State in a position so that they could be thus perfectly and constantly irrigated by bringing the water up to the surface to be controlled at will, what a value would be thus added to these lands. The productions of the State under such a system of irrigation would be beyond estimate. If each farmer throughout the country could thus irrigate even one acre, he would increase the value of that one acre from eight to ten fold. However dry and parched the general lands of his farm might be, he could of this one acre make a constant garden, and thus surround his house with a perpetual Eden, from which at all times of the year he could supply his table with all the luxuries of the temperate and semi-tropical zones.

IT CAN BE DONE.

That is, every farmer in the State can, if he will, and with very little expense, thus irrigate one acre, more or less, and we care not where he may be located; only provided that he has land of medium fertility, he can have an excellent and constantly producing vegetable garden, and a good thrifty growing and good bearing orchard of all kinds of fruits. The driest and most shallow-soiled red prairie land can be made to produce as abundantly as the best and deepest river bottoms.

ARTIFICIAL EXAMPLE.

For the proof of what we say, we will give the following facts: N. Clark, of Sacramento, about half a mile east of Sutter's Fort site, has a piece of land familiarly known in that neighborhood as hard pan land. The soil is a stiff adobe, some of it a pretty sticky clay of a reddish cast, and not over ten inches deep. He has been trying to grow an orchard and garden on this land for a number of years, by surface irrigation, with very poor success. Indeed his efforts for a garden may be said to have been a failure. Last season he noticed a small strip of peas, which he had planted, were growing very thriftily, and matured a good crop, while all the rest of the peas planted at the same time, and cultivated and irrigated, so far as he could see, in the same manner, produced nothing.

He determined to know the cause of this strange fact, and commenced an exploration with a shovel. He soon developed a gopher hole about a foot underground, running parallel with and very nearly under the row of peas that had proved so much more thrifty and prolific than the balance. Into this hole the water had penetrated and from thence had worked its way up to the roots of the peas, which had also penetrated deep into the soil to meet it. This suggested to Mr. Clark a new idea, *underground irrigation*, and he immediately determined to put this idea to a practical test. This season has afforded him an excellent opportunity to do so. Being a manufacturer of crockery and various kinds of earthen and tile pipe, he made up a lot of the latter with a two-inch bore, in pieces one foot each in length. His trees were in rows sixteen feet apart. He dug a trench about a foot deep in the center between these rows. In these trenches he buried this pipe, laying the pieces end to end, leaving

the ends the eighth of an inch apart. Over these little broken joints or openings he threw pieces of broken crockery, so as to permit water to run out and prevent the earth from working in. Across one end of the piece so laid with pipes he set pipes of the same kind and length upright, so that each upright pipe connected with the end of one line of horizontal. He then dug an open trench so as to conduct the water into these uprights, and his irrigating plan was complete.

Into this open trench he turned the water from a pump worked by a windmill and drawing water from a bored well. It worked well, and in a few days his place was completely irrigated so as to show a dampened appearance on the surface. He planted peas, beans, tomatoes, and many other kinds of vegetables between his trees—all of which grew most luxuriantly and produced abundantly. His trees made a magnificent growth and produced a good crop of excellent fruit. In fact, the whole experiment was a most perfect and satisfactory success.

In addition to the advantages of underground over surface irrigation, we would enumerate the following:

First—The same tubes used to conduct the water under the ground may be used to convey any kind of manure to the same locality in a liquid state. To accomplish this you have only to make the reservoirs at the head of the piece of land to be irrigated and manured of sufficient capacity, and fill it with manure; the water, passing through this manure, will extract from it its fertilizing properties, and conduct them, in a liquid state, to the roots of the trees and plants. Thus all the strength and value of the manure will be saved and applied in the best form at the point where most good will result. None will be wasted by evaporation, and all danger of the introduction of weed seed into the soil will thus be avoided. Any variety of manure desired to be used, from the coarsest stable manure to the finest commercial varieties, may thus be utilized to the best advantage.

Second—Another advantage of this mode of irrigation is, that while introducing the water you also introduce the air under the ground, thus enlivening the soil, and at the same time extracting from that air its very important and valuable fertilizing qualities, and applying them directly to the roots of the growing vegetation.

Again, in the Spring or early Summer, the air is much warmer than the soil, and the warm air thus penetrating the soil and working around the roots acts, to a certain extent, like a hot bed, and brings forward the early vegetable as no surface irrigation will.

Third—The same sort of tubing or pipes used for irrigating the land in times of drought will answer the purpose of an underground drainage system in a very wet season.

To accomplish the latter object you have but to open a ditch at the opposite end of your garden from that into which you introduce the water in the pipes, so that the surplus water in the soil will run off. It will then work into the pipes at the openings and run through them into the drainage ditch, and thus your garden will be relieved of too great a supply of water, through the same system that irrigates it. For garden purposes this drainage operation is almost as important as the irrigation, and considering that both operations can be accomplished at the same expense and by the same system, we think it worth while that all our farmers throughout the grain districts should give it a trial. A small piece of ground, thus prepared and cultivated as a kitchen garden and fruit orchard will be worth more to the average grain farmer, taking one season with another, than ten times the same amount cultivated in

the ordinary way, and devoted to the ordinary crops. We would urge this consideration, at this time, for the reason that this is the season of the year when farmers should be at work at their gardens, whether they introduce this system of irrigation and drainage or not.

Fourth—This underground irrigation will, in our opinion, prove one of the most effective and economical means of reclaiming alkali soil or of freeing the soil of a superabundance of this offensive property or ingredient. Water, passing over soil, dissolves the alkali that is on the surface and carries the solution away with it. This is is evident from the fact that in all alkali districts, the low places, where the water accumulates and remains until carried away by evaporation, are strongly impregnated with this material.

Taking all things into consideration, the underground irrigation for all small plots of land, such as gardens and small orchards, is the cheapest, as well as the best.

Pipe, two inch bore, can be had at five cents the running foot, and one and one fourth inch bore at three cents the running foot. Water will readily soak eight feet each way from the pipe, so that a line of pipe once in sixteen feet through a garden will be a plenty. The cost of thus putting it down is but a trifle compared to the advantages we have shown will accrue. The pipe can be had of N. Clark & Co., of Sacramento, or can be made by any other similar manufacturing establishment.

Those who would have good gardens on dry land will do well to try the underground irrigation.

This system of irrigation and drainage will act to free the ground of the alkali, in both capacities—that is, when used for irrigation, as well as for drainage. In the dry season, the water being introduced below the surface, percolates upward, bringing the alkali in solution to the surface, and the action of the sun and air upon it neutralizes it—or evaporation carries much of it off in the air. In the wet season the water draining from the soil and running away through the pipes carries the alkali with it. Thus with this system of pipes we are at all seasons improving our land and benefiting ourselves.

FRUIT CULTURE.

BY ROBERT WILLIAMSON, OF SACRAMENTO.

The subject of fruit culture is one fraught with deep interest to every thinking mind, and is destined to be a pleasing and profitable study to the end of time. The fruit of the tree and vine is one of God's best gifts to men. But like many of His beneficent gifts is too lightly appreciated and most sadly neglected by the great mass of the people. But the few who appreciate this boon of Heaven and have given the subject the consideration which it merits, have found in it a source of pleasure and a store of knowledge rarely found in the study of any other subject. This study is inexhaustible in itself. A man may study it from youth to old age, and it is ever new and pleasing. The more we know of it the more we admire it.

WILL IT PAY?

But let us turn from the amateur's view of the subject and look at it from a financial standpoint. We are asked if it will pay? This (with the masses) is the all important question. This question we would answer in the affirmative.

Fruit growing (when intelligently followed) will pay in any part of the civilized world, and especially in California. Not that we have a better market than elsewhere, but because we can produce a greater variety in larger quantities and with less labor than any other one portion of the globe with the same area of land. This I am aware will sound like exaggeration. But to convince ourselves that such is the fact, we have only to remember that we have in California a greater variety of climates and soils than can be found in any other country of equal extent. Not even the Republic of Mexico or our sister States and Territories on the Pacific Coast, can lay claim to all the advantages which our geographical position gives us in this respect.

OUR CLIMATE.

In California we have a climate varying almost from the extreme of heat to the excessive cold, with a soil equally as varied. Hence we need not go beyond the climate of our own State to find a locality where we can successfully grow the tropical fruits, or to find another locality as well adapted to growing the fruits peculiar to the northern climates. The intelligent fruit grower has only to decide what he wants to grow and then select his locality, make a judicious selection of varieties, plant them properly, and give them proper attention afterwards, and he may count on certain success. But he who goes to work to plant a market orchard on a soil or in a climate not adapted to the fruits he intends to grow, or makes a wrong selection of varieties, or takes no pains to plant properly, or takes no care of his trees or vines after they are planted,

may with equal certainty count on a disastrous failure. Then he is prepared to proclaim to the world that fruit growing will not pay in California.

I am aware that there is some apology for many failures that have occurred in this branch of business. We have people here from all parts of the world. They came here with their home notions of horticulture and went to work in accordance with these notions, and after years of unsuccessful toil were forced to abandon their favorite plans and perhaps their favorite fruits.

A man to be successful in growing fruits in this country must either have a practical knowledge of the business or must avail himself of the benefits of his neighbor's experience.

FRUIT MARKETS.

Now for our market facilities, present and prospective. We have a fair home demand. There is, perhaps, no place in the United States that consume so much fruit (in proportion to numbers) as do the people of California; and good fruit properly handled has always borne a living price in our markets, and prices have been steadily advancing for the past six years, notwithstanding the thousands of acres that we are annually planting in trees and vines. We believe our market will continue to grow better. We are opening up new markets almost daily on all sides of us. We have, on the east and north, the State of Nevada, and the Territories of Arizona, Utah, Colorado, Wyoming, Idaho, Dakota, and Montana, embracing territory larger than all the States east of the Mississippi river; and this immense country is little else than one vast field of minerals. These mines must and will be worked, and they must and will come to California for the great bulk of their fruits, because they have neither the climates nor soils for extensive and varied fruit growing; and we are more adjacent to them than any other good fruit-growing country.

The same is true of the vast lumber districts north of us. They must have fruit; and where can they go for variety and quality but to California? Moreover, we believe the day is not far distant when there will be a lively demand from the Asiatic continent for our dried and preserved fruits. And if our two years trade with eastern cities has already favorably affected our fruit market, what will be the effect of all these other markets when fairly opened up? Will not fruit growing become almost the paramount interest of the State?

FRUITS FOR PROFIT.

As to the best kinds of fruit to be grown for profit, we would remark that all the southern portion, and many localities in the more northern counties of the State, are well adapted to growing oranges, lemons, limes, olives, dates, filberts, cocoanuts, almonds, and English walnuts. To these we may add figs, prunes, and grapes—the three latter will succeed well in most parts of the State. All of the above named fruits (either green or dry) we are importing in large quantities. It would perhaps not be too much to say that the people of the United States are paying annually to foreign countries the enormous sum of one hundred million dollars for these very articles, every one of which can be successfully grown and prepared for market in our State; for there can be no climate better adapted to drying fruits than ours. In addition to the above, we can

grow, in most parts of the State, all the other fruits, from the apple to the strawberry; and in the Sacramento Valley we can perhaps grow a greater variety of fruit than in any other portion of the State. Our climate is especially adapted to growing the leading fruits, such as grapes, pears, plums, peaches, cherries, figs, and apples, and the foothills, or low mountain ranges, are peculiarly adapted to growing the apple. In these districts we can grow as fine winter apples as can be grown in Oregon or the Atlantic States, and they always command remunerative prices in our local markets.

FRUITS FOR GENERAL CULTIVATION.

I would recommend the pear, plum, and grape, as they succeed remarkably well in all parts of the State. The pear and grape can be successfully shipped to eastern cities and sold at remunerative prices. The grape can also be converted into wine or raisins, and find almost a world-wide market. The plum also may be dried and shipped to foreign markets at a good profit. We can find a remunerative market in the East for all the plums that we can produce. As to varieties of fruit that we would recommend, it will be impossible, in this essay, to give them all even a passing notice; we shall, therefore, only mention a very few of the leading sorts.

As raisin grapes: the White Muscat of Alexandria, the White Malaga, and White Muscatelle; table grapes: Black Malvacia, Black Hamburg, and White Muscat; wine grapes: the White Reisling, Yellow Orleans, and Zinfindel; many other varieties might be mentioned. Shipping grapes: the White Muscat and Flame Tokay stand at the head of the list. There are others that ship well, but none we think equal to the two above named. Shipping pears: Bartlett, Easter Burree, Vicar of Winkfield, and Glout Morceau; many other varieties, however, will ship well.

We would here suggest as to varieties, that it would be well for parties who can do so conveniently to experiment with seedings. All our varieties of fruit were originally produced from seed, and it is not unfrequently the case that from one hundred or two hundred seedlings we may get one or two fine and distinct varieties. Fruits thus produced are generally well adapted to the climate in which they originated. I have in my nursery four new varieties of apple, and six of peaches, all of California origin; they are all worthy of extensive cultivation, especially the latter; and some of them I consider superior to any of the old standard varieties.

FRUIT CULTURE.

BY C. W. REED, OF YOLO COUNTY.

The subject of fruit culture is one upon which so much has been said and written that I cannot expect to add anything that will be new. But if I can say anything that will prompt others to avoid the mistakes that I have made I shall have the satisfaction of having done something to benefit the great industry of fruit culture in California. I am so little accustomed to giving publicity to my own thoughts that for me to review the subject of fruit culture in the briefest possible manner I fear will prove tedious. What I shall say principally will be not as an amateur, but as a practical operator from my own experience, during the past seventeen years in California. When I admit that I have made many blunders, you can realize the fact that I have paid very dearly for my want of correct information at the outset, and if any new beginners can profit by my suggestions it will be a source of gratification to me. I am fully impressed with the idea that California is destined to occupy the very front rank as a fruit producing country, and I hope the knowledge that will be disseminated through this Club will help develop this great industry and make it a source of profit to every one engaged in it. That the soil and climate of California are capable of producing more kinds of fruit and in greater perfection than any other country with which I am at all acquainted is a fact concerning which I do not entertain the shadow of a doubt; and when I consider our almost total exemption from insects and the diseases so prevalent to fruit trees elsewhere, I feel constrained to charge the blame upon the producer whenever I see a poor specimen of fruit of any kind. Almost every kind of fruit can be grown to perfection within the limits of our own State under proper cultivation; but in this business, like every other, it is all-important to study adaptability of soil and climate, and when they are not specially adapted to the particular culture proposed, seek a new locality or set yourself vigorously at work to correct the defects at the very outset. If the condition of your soil is not just what it should be, spare no pains or reasonable expense to place it in proper condition before planting your trees, and where the climate is not decidedly favorable, you can adopt a mode of culture which will by degrees do a great deal towards acclimating your trees to suit different degrees of heat or cold. These modifications can be wrought by culture and a proper knowledge of the trees you desire to cultivate, and that alone.

The leading idea I would like to impress upon every one who is engaged in fruit culture is, that the small additional outlay between thorough and indifferent work at the time of planting trees is so trifling, when considered in connection with attending results, that it seems to me it is only necessary to be understood to insure observance. A hole two feet in diameter and eighteen inches in depth may seem ample in which to plant a tree, but the additional cost to dig said hole four feet

in diameter and four deep will be paid for tenfold before the third crop of fruit has been gathered.

Another fatal blunder into which I have sometimes fallen, and one I earnestly recommend all to avoid, is the crowding together of too many trees upon an acre of ground. Ample space insures better fruit, and a larger profit will be secured, even though the aggregate yield should be less in point of quantity.

To be eminently successful in any pursuit in life, it is absolutely necessary to possess a thorough knowledge of the business engaged in; for ignorance upon any point, however trifling, may suffice to cause a financial failure, and ultimately destroy your enterprise. This applies generally to all business, and especially to fruit culture.

In the learned professions, if a man assumes to practice before he has acquired sufficient information to entitle him to a diploma from professors of acknowledged skill, he is at once and by common consent shunned as a "quack" or "impostor." In the mechanic arts one must by years of toil and application acquire such absolute knowledge of his craft as to impress the common observer of his skill as an artisan, or he is at once dubbed a "botch." In agriculture and horticulture there is, unfortunately, no standard of excellence fixed, and success alone, from one's own individual efforts, must determine whether he is a "quack" or a "botch."

IMPORTANCE OF KNOWLEDGE.

Let all who are engaged in the noble work of tilling the soil strive for a higher standard of proficiency before individual responsibility is assumed as an agriculturist or horticulturist. Let us learn patiently from our own experience and the experience of others till we acquire sufficient skill to avoid mortifying blunders and the financial distress which generally follows misdirected efforts. I have labored hard for seventeen years, and am only now just beginning to learn the rudiments of my business and to comprehend how it may be made profitable; and I will here remark that the profits do not depend half so much upon the amount of work done as the manner in which it is accomplished. One good, sound, healthy tree, which has been properly lifted from the nursery without bruising or mutilating its roots, if properly planted in the orchard and cultivated up to the time of fruiting, will prove more profitable than three trees that have received such attention as is ordinarily bestowed. I do not say that the one tree will yield as much fruit as the three, but that its product will yield a profit equal to or greater than the three.

In order to make fruit growing for market profitable, too much care cannot be bestowed upon the varieties to be selected—always bearing in mind that there are at least four essential considerations:

First—Thrifty growing varieties.

Second—Regular bearing varieties.

Third—Fruit of good quality and high color.

Fourth—Varieties that can be transported to market in perfect order.

PLANTING ORCHARDS.

In planting an orchard it is all important to select in the nursery only healthy and well grown trees, and in transplanting if the roots become seriously injured or mutilated it will be true economy to throw the trees away at once, rather than attempt to restore them to health and vigor

after transplanting them to the orchard. The proper planting of trees is, in my judgment, by far the most important step in connection with profitable fruit culture; and yet, so far as my observation extends, it seems to be the least considered. Whether we do not understand the great strain upon the vitality of a tree in being transplanted, or whether we cannot comprehend that anything suffers that does not cry out with pain, is a matter that everyone must decide for himself. Had I never been guilty of the same folly myself, it would now, with my present ideas, puzzle me very much to conjecture the motive which could prompt such an utter disregard of a subject pregnant with such important results.

I had planted a great many thousand trees for myself before I fully realized the great loss I must necessarily sustain in consequence of my imperfect work; but I assure you I have not recently been guilty of such folly. If I err at all now, it will be on the other side, for I can hardly conceive it possible to bestow too much labor and care in planting trees. I will not now permit a tree of any kind to be planted on my grounds until the hole has been dug from four to five feet in depth, and at least four feet in diameter, whether the land is hard or soft, wet or dry. To remove that much earth, and refill the hole again with the best surface soil or compost, I consider decidedly necessary in order to grow a tree to the best advantage. Whenever you have observed closely the difference between the product of a tree which h s been thus planted and one that has only been tolerably well done, I can assure you that you will never again consent to have such work slighted in the least, for the cost of the extra work at the planting period will be found absolutely insignificant compared to the growth and product of your tree in after years. I wish still further to impress upon you the importance of leaving ample space between your trees, to prevent their becoming crowded, for you must not expect large crops or fruit of good quality unless you provide for an abundance of sunshine and air between the branches. It has been a fatal mistake with a large amount of the orchards that have been planted in this country, and I do not consider that trees that are crowded in an orchard have half the value they would have if they had plenty of room.

PRUNING AND TRIMMING.

Judicious pruning and trimming trees, and at the proper time thinning out the fruit from trees that are inclined to overbear, are matters of the utmost importance in making fruit culture a profitable business. You will find more profit in raising one hundred pounds of fruit that is worth two cents per pound, than in raising two hundred pounds that is only worth one cent per pound.

But thorough pruning does not mean the murderous habit, indulged in by many, of sawing off a certain amount of wood that happens nearest the ground. On the contrary, it means a systematic manner of simply thinning and shortening the small branches, and cutting out the weak ones, leaving the tree in a symmetrical and uniform shape. Large branches should never be taken off unless absolutely necessary.

Ju licious thinning out of fruit from overbearing trees is of the greatest importance, as it enables the remaining fruit to mature perfectly, and saves the tree from breaking down or becoming stunted by too great a strain upon its vitality. All such labor and care will be amply

requited when the final reckoning is made after the crop has been gathered.

MARKET FOR FRUIT.

The question of a market for fruit has been a serious consideration with our fruit growers in past years. The fertility of our soil and climate enabled us to raise fruit in such great abundance that we had no market within our own borders for the half that could be produced, and labor was too high for fruit growers in California to dry their surplus, with the difference in exchange between gold and greenbacks, for successful competition with the eastern markets. But within a few years everything has been changed; the completion of the great overland railroad has brought us in such quick communication with the vast mining regions of the Territories, that we can supply them with every variety of fruit grown in the country, and they must ever remain entirely dependent upon California for their supply. The overland railroad has also opened up the whole United States for a market for California fruits—both green, dried, and canned. I have shipped fruit grown by myself to New Orleans and Boston, with satisfactory results. I have made one shipment of green pears to London, but have not yet received returns, and cannot tell what the result has been. I have seen California dried fruits and canned fruits selling in the markets of New York and Boston at prices that would pay the producer well. We have shipped from California by the Pacific Railroad, during the year eighteen hundred and seventy, seventy full car loads of fruit; and during the year eighteen hundred and seventy-one, there has been shipped one hundred and fifteen car loads of fruit (a year of extreme drought). The most of this fruit has been pears, and shipped east of the Rocky Mountains and as far as Chicago, St. Louis, New Orleans, Memphis, Philadelphia, New York, and Boston. The business of shipping green fruit alone should continue to increase until we can send one thousand car loads annually from California. There is a market in the East, and we can send that much with a profit to the producer with a little modification in present rates of freight.

But recently the doors of China and Japan have been opened to commercial relations with this country, and the increase in exports from San Francisco alone to those countries has increased during the past year over six millions of dollars; and I believe our fruit product in future years will be an important article of commerce with those countries. Thus we see before us an almost unlimited market—a market exclusively our own—greater than any other locality within the borders of the United States, and with facilities for producing fruit unequalled by any other country. What greater inducements can fruit growers desire for enlarging and extending their operations with a certainty of meeting a suitable reward for their labor?

VARIETIES FOR SHIPPING.

Now I wish to add, in this connection, that there are but few varieties, compared with the many, that will be profitable for shipping or drying, and no one must expect they can ship any kind of fruit they happen to grow, with satisfactory results; on the contrary, you cannot ship anything but fruit grown to the greatest perfection, and which costs no more than the poorest fruit, grown in the most inferior manner. Already there has been shipped a great deal of inferior fruit to the Eastern

cities, fruit unfit to be placed in the nearest market at home. This is suicidal to the best interest of every one engaged in fruit culture. We are destroying our own reputations, preventing the increased demand for our fruit, and discouraging those who are endeavoring to open up a market thousands of miles from home. This is all wrong. If your business is worth anything, it is worth doing well. There is no excuse for growing and sending inferior fruit to market in California. In regard to the kinds of fruit that can be grown and that are adapted to the climate of California, I will only mention those that have come under my own observation, commencing with the apple, which is a world-renowned fruit, and is grown successfully all over the State, and is more universally used throughout the greater portion of the United States than any other. It is a fruit, however, that I think more unequal in quality and time of ripening than any other, in the different sections of the State. The great difference in soil and climate has a wonderful effect upon the same variety of apple in different localities. Therefore, in order to have apples in their greatest perfection, we must have varieties suitable to the locality in which they are grown. Varieties most desirable to cultivate about Sacramento, or in the surrounding country, may not be the best for the mountains, or near the seacoast. The apple succeeds well upon a variety of soils, but I think can be grown with less care upon the alluvial soils of our river bottoms. It does well upon the red lands, in the gravelly soil of the foothills, in the mountains, around our bays, and along the seacoast, but I think attains a greater perfection at an altitude of from three thousand to four thousand feet through our mountain ranges—more particularly the Winter varieties of the Northern States. Apple trees should be planted at a distance of at least thirty feet apart each. If you plant as close as most of the apple orchards in the State have been, your trees lose at least half their value when they have attained the size and age to be really profitable. I will here remark, in regard to all kinds of fruit trees, if they are not planted upon soil that will afford a sufficient amount of moisture to promote a thrifty growth with good cultivation, irrigation becomes a necessity. Apple trees can be grown in eight years to produce from five hundred to one thousand pounds of fruit to the tree.

BEST VARIETIES—APPLES.

As a rule, red apples bring a better price in the market than any other color. I have found the following varieties to succeed well about Sacramento: Early Harvest, Early Strawberry, Red June, Red Astrachan, Summer Bellflower, Summer Rose, and William's Favorite. The above are early varieties. I do not think it would be advisable to cultivate the Early Harvest extensively for market. For Autumn varieties, the Alexander, Duchess of Oldenberg, Equinteley, Fall Pippin, Gravenstine, Maiden's Blush, Jonathan, King, Rhode Island Greening, and Yellow Bellflower are among the best. These are all Autumn varieties in this locality, although some of them are Winter varieties in other sections of the country. For Winter varieties we have the Yellow Newtown Pippin, which I believe is a greater favorite all over the State than any other; the Ben Davis Spitzenberg, Rawles, Jannet, Swaar, W. W. Pearmain, and American Pippin are all good keepers. I presume there are many other varieties fully equal to these. There are also some seedling varieties that have been produced near Sacramento that I think will prove valuable, both as to fine quality and as good keepers; and I

would suggest to this Club that they extend a general invitation to those having seedling fruit of any kind to exhibit specimens, with description of habit and growth of tree, and that a legitimate name be given to all such varieties as are found worthy of general cultivation.

PEARS.

The pear has perhaps attracted more attention during the past two years than any other kind of fruit in California, from the fact of its having become an article of commerce with Eastern cities. I believe the pear grows more universally perfect all over the State than any other kind of fruit, and that it can be grown to perfection on a greater variety of soils. The pear tree grows well upon soils strongly alkaline, where hardly any other kind of fruit can be made to mature without first neutralizing the effects of the alkali. It thrives on dry land, and will stand more water without injury than any other fruit tree with which I am acquainted. A loamy soil with clay bottom I regard as the very best soil on which to grow standard trees. Dwarf trees should not be cultivated except on alluvial bottom lands, if you desire profit or satisfaction from their culture. Standard trees should not be planted less than twenty-five feet apart each way, and dwarf from eight to ten—I prefer ten. Many varieties of pears are inclined to overbear in this country, particularly those that only produce crops alternate years, so that it becomes an absolute necessity to thin the fruit on such trees. There is no excuse for growing inferior pears in any portion of California, except bad culture. There is more skill required in gathering pears at the right time and ripening them so they will attain their greatest perfection than any other kind of fruit. It is difficult to describe just when to gather the crop. An expert will tell by the appearance of the fruit, but ordinary fruit gatherers cannot, unless they remain on the trees too long, which will not allow of their being shipped at any great distance; and if they are gathered too soon they shrivel and lose their flavor. The parting of the stem from the spur when lifted by the hand, is perhaps the surest indication for gathering Summer and Autumn varieties. Winter varieties should be left on the trees as long as practicable. Pears keep better in masses and ripen with a better flavor and higher color in a dark room, which should always be clean and free from any strong odor. Pears should always be gathered with the greatest care, as the slightest bruise will cause them to decay before maturing.

In regard to keeping Winter pears, Mr. Barry says, "that after many years experience he has found the most effective means of preserving Winter pears to be late gathering, packing away carefully only sound fruit in close barrels, leaving them in an open shed, only protected from rain and the direct rays of the sun, as long as the temperature is above the freezing point." The keeping quality of pears in California is very much affected by the soil and climate in which they are grown. Since the completion of the Pacific Railroad pear culture becomes of more importance perhaps than that of any other kind of fruit. But for those engaged in it the growing of the most perfect fruit will be the only means of making the Eastern markets available. The following varieties are cultivated more generally throughout the State than any others: Madeleine, Bloodgood, Beurre Clifford, Dearborn's Seedling, Clapp's Favorite, Bartlett, Seckle, Duchess D'Angouleme, Beurre Bose, Beurre D'Anjou, Beurre Clargeau, Beurre Hardy, Doyenne du Courmica, White Doyenne, Louisa Beurre de Jersey, Onondaga (Swan's Orange), Stevens'

Genesee, Urbaniste, Beurre Easter, Beurre Geis D'Hiver, Noveau Columbia, Doyenne D'Alencon, Glout Moreeau, Lawrence, Passe Colmar, Winter Nellis, and Vicar of Winkfield. The Doyenne D'Alencon keeps the best of any variety I have yet fruited. I have it in perfection now. I believe all varieties of pears can be made to grow to as great perfection in this locality as in any other part of the State, and I have no doubt there are many varieties that I have not mentioned equal or superior to any of those mentioned for general cultivation.

THE CHERRY.

The cherry is a fruit that is receiving especial attention in California and is being cultivated on a very extensive scale. Orchards are planted with thousands of trees each. The great perfection in which it grows and the abundant crops pro luced annually will make it a profitable fruit to cultivate, even if drying and canning should eventually be resorted to to consume the surplus crop. There are many of the Bigareau varieties, particularly the Napoleon, that I think can be shipped East successfully and profitably, which will make a market for a much greater quantity of this delicious fruit than if we were confined to the markets of California.

The cherry requires a dry soil. A sandy loam is the best, and particular care is necessary to protect the young trees from the hot sun after transplanting in this section of country. I believe the Mahaleb will be found to be a better stock than the Mazard on which to grow the cherry in many localities, especially in uplands. Nearly all varieties attain the greatest perfection here with good cultivation.

THE PLUM.

The plum should receive particular attention with fruit growers in California. The tree is hardy, grows on nearly all soils, and bears abundant crops all over the State, while in the Eastern States the crop is nearly destroyed by the "curculio" and "black gnat." Many varieties can be shipped as far as New York in perfect safety. I have shipped the Washington, Yellow Egg, Coe's Golden Drop, and Coe's Late Red that far without the slightest injury. For the different varieties of plums, particularly the prune varieties, dried, we have almost the whole world for a market, and no fruit can be dried with less trouble, or more profit, than the plum.

PEACHES.

The culture of peaches should not be neglected wherever they can be grown successfully. The cultivation of the peach, where it can be grown profitably, is limited perhaps to a smaller portion of the State than any other kind of fruit. A rich sandy soil is the very best for the peach. It can be grown throughout the Sacramento Valley, and in favored localities along the foothills, and in the mountains, to great perfection and profit, if within reach of our own markets. Great care should be taken to select varieties that are not troubled with the curled leaf, which seems to be the principal enemy of the peach in this country.

APRICOTS AND ALMONDS.

The apricot is also a profitable fruit to grow wherever the peach succeeds, if only for drying and preserving.

The almond is but recently receiving the attention it so justly deserves in this country, as one of the most profitable trees for fruit growers to cultivate. There are some varieties grown nearly all over the State, and I believe there is no crop more to be relied on for profit than the almond. California ought to supply the market of the United States. Mr. Taylor, near Marysville, has recently planted ten thousand trees for himself of the Languedoc variety. That is the best variety, all things considered, that I have seen yet.

THE GRAPE.

I shall not mention any other kind of fruit except grapes, which are of equal or greater interest to fruitgrowers in California than any other. In considering grapes as a profitable crop to cultivate, I will mention four purposes for which it is worth the especial attention of all fruitgrowers in the State, for it succeeds everywhere upon all kinds of lands for some one of the four purposes I shall mention, with perhaps less care and more certainty than any other kind of fruit. We are cultivating the grape for wine and brandy; we are cultivating it to supply our market with the choicest table varieties; also for raisins, and for shipment to Eastern markets. For all these purposes we must have varieties especially adapted. For wine and brandy I am not prepared to say which varieties are most desirable, although the common Mission has been cultivated and is used more extensively for those purposes than any other, but I do not believe wine men regard it as the most valuable variety. For raisins, I consider the White Muscat of Alexandria the best. It is a well known and most delicious grape, and is the variety that makes the fine Muscatel raisins imported from Spain. California ought to supply the market of the United States with raisins as well as almonds. Some of the finest varieties to cultivate for our home market are Black Hamburg, Black Morocco, Black Prince, Black Muscat of Alexandria, White Muscat of Alexandria, Cannon Hall Muscat, Royal Muscadine, and Reine de Nice. For varieties for shipping East there are very few that can be shipped successfully, as they are necessarily confined to firm-fleshed varieties. The Cannon Hall Muscat and Reine de Nice I think are the best that are cultivated to any extent as yet. The White Lisbon I regard as superior to either of these, having bunches large and loose, berries oval, skin greenish white, flesh firm and crackling, not very juicy, but with a sweet and refreshing flavor. It is this grape that is imported from Portugal in such large quantities to supply the Eastern markets. I have no doubt but it will succeed as well here as all other varieties that have been tested. There may be others that can be shipped in perfect order; but whatever fine varieties you can ship East in perfect order will find an almost unlimited market, with prices that will pay handsomely where they can be grown so easily as in California.

HOW TO MAKE FRUIT GROWING PAY.

BY A. S. GREENLAW.

How to make fruit raising pay might be more easily demonstrated in theory than by practice, as many have found to their cost. While theory takes an outline of what has been in some particular instances realized, and judging from what have been the requirements of the past what may be the future increased demands, arriving at conclusions highly satisfactory, practice comes with spade and plowshare, pruning-hook and saw; trees and vines are grown, fruits marketed, and perhaps a very different result is obtained. A common error is to cultivate wholly a few varieties that may bring the highest price in the market at the present time, neglecting equally good varieties that may be cheaper. The probabilities are more than even that by the time the trees and vines are in bearing condition the market will be overburdened, and those kinds which have been neglected bring highly remunerative prices. There is more money lost by trusting to a one-crop system of farming than, perhaps, from any other cause. The grain grower discovers the fact when his crop sells for six bits per hundred; or, if a man's dependence is on the raising of hops, and they, contrary to their nature, fall instead of rising to meet his expectations.

To make fruit raising a profitable business requires a man to enter the field from choice rather than necessity. Certain conditions too are to be observed, such as favorable and convenient markets (there being a greater profit in disposing of the fruit in a green state), a suitable soil, and a wise selection of the best varieties that will give a continuous supply throughout the season—only giving preference to those particular kinds that would ripen during the period of greatest demand. Hence I would raise more Winter apples than Summer and Fall varieties; I would raise more peaches that ripen in August and September than the earlier kinds, as the former are of better quality and more sought after for canning purposes. It is true, that if we are first in the field a very profitable result may be obtained by raising some new and earlier fruits; but the market is soon overstocked. You that have been long in the business will remember with me how much haste was made a few years ago in raising the early harvest and red Astrachan apples; also the Madeleine pear, that then brought prices ranging from thirty to thirty-five cents per pound. How soon the demand was more than supplied, and we found it very hard to dispose of all we raised. In eighteen hundred and sixty and sixty-one, peaches were worth about one cent per pound, and many were allowed to go to waste, as they would not pay the expense of marketing; and so discouraged did the growers become that they were slow to replant their orchards destroyed by the flood of eighteen hundred and sixty-two, for which cause good peaches have, since that time, been worth from three to ten cents per pound, while the second quality have sold readily at from two to three cents. I have

found by observation that the larger fruits, such as pears, apples, and quinces, will average, when carefully marketed, about two cents per pound. Among those engaged in the cherry culture, I have to hear of the first one who finds it unprofitable. I might speak as favorably of other kinds of fruits, such as plums, apricots, nectarines, etc. The different kinds of berries are as important in our local market as any other variety of fruit, as shown by reported sales in San Francisco.

BLACKBERRIES.

I cannot speak with certainty of the profits of these, with the exception of blackberries. There has been a very great difference in the price of this berry in the last few years, varying from twenty or twenty-five to eight cents per pound, the average price of last year—this last figure paying the producer well. From an acre of good vines six thousand four hundred pounds may be raised—they will oftener produce more than less. These, at eight cents per pound, would amount to five hundred and twelve dollars. I will introduce the debtor side of this account and find the net profit. Plowing and fitting the ground, six dollars; twelve hundred and forty roots, eighteen dollars and sixty cents; labor in planting, three dollars. Total, twenty-seven dollars and seventy cents. This is all that can be charged to the first year's account, as the further cultivation is chargeable to a crop of vegetables raised on the same ground. Second year: trimming vines, eight dollars; cultivating, nine dollars; rent of land, twenty dollars; picking and marketing at three cents per pound, one hundred and ninety-two dollars; expenses the first year, interest added, thirty dollars. Total, two hundred and fifty-nine dollars; leaving a net profit of two hundred and fifty-three dollars. I think this may be regarded as an average profit from the vines in future years.

LARGE FRUIT.

As regards the quantity of the larger fruits raised, one need but look upon any well cultivated tree when loaded with fruit, and in his mind multiply the number of pounds by eighty, the number of large trees to the acre, and this by two cents, the average price, and every one will see the profit in the investment. But one says: "All very fine; I have a lot of apple trees that bear the best of fruit, but I fail to see the two cents per pound." Says another: "I have good pears, but none come after them at any price." Another: "I was down town and inquired the price of peaches. They told me they had plenty." All these men say: "I don't see how this thing of raising fruit can pay." So they market none of their crop green, as the traders are well supplied; neither dried, as the labor of drying costs more than the fruit will bring. They do not even dry sufficient for their own use, although they have abundant leisure. Nor have they even a few pigs that might be fattened without trouble, and they (the pigs) might certainly be marketed; and if the account at the grocery be looked over and see the number of times bacon and lard are charged, one might infer that a goodly amount might find a home market. I have said nothing of the grape, but it will lose none of its merits if I pass it over to our able and worthy fellow member who is soon to give us an essay on this noble fruit and its uses.

During the years an orchard is coming into bearing, the ground may be planted with vegetables, which will pay all the expenses of cultivation. We should not forget to set out a small nursery of young trees,

that we may replace or enlarge our orchard as occasion requires. The expense is but little if any more than to purchase the trees. If you raise them yourselves, you will be sure to get the kind you desire. There is such a babel of names for fruits on this coast that the same variety of fruit may be known to the farmer and nurseryman by entirely different names, so that we are not always sure of getting the kinds we want. This one fact shows the great necessity of a standard work on California fruits.

THE MARKETS.

To realize the greatest price, be always in the market with a full supply of all seasonable kinds. Thus, every day, from the first of May till the first of December, we have a profitable trade for eight months in the year. Should some sell so low as to realize but little over the expense of marketing, or even be given away, it only sharpens the appetite, and we are fully compensated by having those kinds that bring the highest prices. By all means, be careful in selling that the purchaser may get just what he bargains for. Get your fruit into the hands of the consumer in the most direct way possible. Be ready to fill all orders with dispatch. Be obliging to your patrons; let them know that you consider what is for their interest to buy it is for yours to sell. Be sure you charge no more than the market price, as reputation has much to do in disposing of your commodities. Never allow your crop sold on commission, unless disposed of in the larger towns, where the demand is great, and only to those houses that make rapid sales, quick returns, and charge small percentage. There will necessarily be much that is unmarketable; we should take the most direct way of turning this into cash, by employing such help as work for their board, lodge themselves, and live on the fruit, making returns in good sweet bacon and lard.

GOOD TOOLS AND WORK.

Have good implements to work with, and keep them in good condition and in their proper places. Nothing is gained by spending time in looking after lost tools. Leave nothing for to-morrow that may be done to-day. Rise early, for the industrious find capabilities in the soil that the sluggard never dreamed of. Take the papers—an agricultural as well as a general newspaper. They are as much a necessity to one in this department of industry as in any other. I would not impose on you by consuming time to point out their utility, which must be self-evident to every thinking person. You show me a fruitgrower that does n't take a paper, and I will show you one that does n't make his business pay. It is a sufficient cause of failure, and he should subscribe for one at once. But however anxious we are that we may have cash to show for our year's operations, we must not forget to nourish well the goose that lays our golden eggs. Our trees must be well pruned and cultivated, and if any tree bring not forth good fruit it must be grafted with better or hewn down and cast into the fire. With the showing I have made, our markets continually being enlarged by an increasing population, with the facilities afforded by rapid transportation, opening up distant markets for many of our fruits, I think his vision must be obscure who cannot see in the future, as well as the present, bright prospects for those engaged in this pleasant avocation.

CULTURE OF THE SUGAR BEET.

BY WM. M. HAYNIE, OF SACRAMENTO.

In presenting a brief statement of facts in reference to the culture of the sugar beet, and its great value as a sugar and forage root, I cannot avail myself of much practical experience in connection with the subject; but, as I promised you, I will give you a statement of what I believe to be reliable facts, deduced from information obtained from practical sugar makers, and different reports upon the subject. It is no longer with us a problem whether California can raise the sugar beet with sufficient percentage of saccharine matter secreted within its cells to make the extraction and conversion of this principle into sugar a profitable and a grand financial success.

THE HISTORY OF BEET SUGAR.

The history of the culture of the beet for sugar is one of the most interesting and valuable pertaining to the industrial arts. Although it does not run back more than seventy-five years, its growth and developments have been so rapid that in many European countries the production of sugar from the beet is firmly established, and has become one of their most stable and valuable industries. In seventeen hundred and forty-seven, Margraff, a Prussian chemist, read before the Academy of Berlin his memoir on the existence of a sugar in the beet identical with that in the cane. It was not, however, until fourteen years after this that this discovery found its first application.

Achard, another chemist of Berlin, republished the discoveries of Margraff, and it is to his indefatigable industry and perseverance that we owe the first practical methods used in the manufacture of beet sugar. From seventeen hundred and eighty-nine to seventeen hundred and ninety-six Achard devoted himself to the culture of the beet and experimenting in sugar making at his farm at Caulsdroff, near Berlin, at the end of which time he founded at Kunern, in Silesia, with the assistance of Government, a manufactory which proved to be successful. This is the origin of the manufacture which is to-day represented by so many establishments through continental Europe. The great cost, however, of the sugar, from the crude and defective method of extracting the juice, defacation, and crystalization of the sugar, precluded this and two other establishments, which had been erected near Paris, from prosecuting the business, and very soon they were forced to suspend operations, and their failure threw great discredit on the industry. In eighteen hundred and ten the attention of the French Government was called to this subject, and some specimens of sugar were presented to the Emperor Napoleon. This sugar was the product of experiments made in France and induced by a report read before the Academy of Sciences by M. Deyeux. The price of cane sugar (about sixty cents per pound) in France at that

time and the feasibility of the manufacture of sugar from the beet having been established, the Emperor soon set himself at work to extricate his empire from the sweet dilemma in which he found it placed through his aggressive warfares. Consequently, on the twenty-fifth of March, eighteen hundred and eleven, he ordered that thirty-two thousand hectares of land should be devoted to the culture of the sugar beet, and one million francs were placed at the disposal of the Minister of the Interior for encouraging this industry, and under date of January fifteenth, eighteen hundred and twelve, he issued a new decree establishing five Schools of Chemistry, where the processes used in this manufacture should be taught. This act of the great Emperor was one of the crowning acts of his life and was characteristic of the man—quick to perceive the situation and prompt to act in such a decided and positive manner that all obstacles that had hitherto prevented the successful prosecution of this great industry vanished like the wind, and the historian will do well to remember that this man of genius is well entitled to the honor of being the first permanent founder of this great agricultural industry. We find also from the crop of eighteen hundred and twelve there were two million kilogrammes or nearly four million pounds of raw sugar produced in the four imperial factories. The political crisis, however, of eighteen hundred and fourteen was a terrible blow to this new industry, and caused the temporary suspension of all the manufacturers but one. Government again came to the assistance of the industry and it revived, since which time it has made rapid strides—doubling in France every ten years since eighteen hundred and forty. In eighteen hundred and sixty-five the average annual consumption for each person was fourteen pounds, the beet sugar manufacturers supplying sufficient for that amount.

AMOUNT PRODUCED.

The total amount of sugar produced from the beet on the continent during the year eighteen hundred and sixty-nine, was over six hundred and eleven thousand tons, from eighteen hundred manufactories. Of this amount France produced three hundred thousand tons, which, at six and a quarter cents per pound, amounted to thirty-seven million five hundred thousand dollars. It is further estimated that the molasses available for distillation of spirits is valued at two million five hundred thousand dollars, making the saccharine product of the country forty million dollars. The cultivation of the sugar beet and manufacture of sugar therefrom in our own country has not made that rapid progress which we could wish; but after a series of preliminary disappointments and failures, such as embarrass almost every new and valuable industry, the economic difficulties of the beet sugar culture seem to have been measurably overcome. Much still remains to be done; but from the results already obtained, capital finds fair inducements for more extended investment, and more especially so in our own State, whose soil and climate are unsurpassed for the growth of the sugar beet and the high per centage of saccharine matter contained in them.

IMPORTANCE OF THE INDUSTRY.

It has been well said that the rapid growth and development of this industry throughout Europe forms one of the most interesting spectacles of the present century; and the economic, social, and industrial questions to which it has given rise have attracted the attention and

utilized the labors of the leading minds of the countries in which it has been established. The beet has found its supporters and adherents in the cabinets of kings, the academies of science, in agricultural societies and farmers' clubs, in the machine shop, and in the peasant's cottage. No other industry of modern times has so successfully harmonized the agricultural and manufacturing interests, which have heretofore been regarded as inimical to each other; or has originated and supported so many subservient and minor interests. With these patent facts presented to us, so fully demonstrating the vast agricultural and manufacturing wealth now slumbering in the cradle of the earth upon which we stand, it needs no prophetic mind to foresee the great social, financial, and industrial wealth that awaits us in the immediate future. The value of the success of this industry in our country may be partly estimated from our enormous importations of foreign sugar. During the fiscal year ending June thirtieth, eighteen hundred and seventy, we imported eleven hundred and sixty million four hundred and sixty thousand one hundred and fourteen pounds of brown sugar, one hundred and fifty-one thousand five hundred and twenty pounds of refined sugar, thirty-six million one hundred and sixty-one thousand nine hundred and thirty-five pounds of melado and syrup of sugar cane, fifty-five thousand eight hundred and twenty pounds of candy and confectionery, and fifty-six million three hundred and seventy-three thousand five hundred and thirty-seven gallons of molasses. The total declared value of these imports was sixty-nine million eight hundred and twenty-seven thousand eight hundred and eighty-four dollars. Our domestic sugar cane, beet, maple, and sorghum did not amount to one eighth of this aggregate. During the year following, the aggregate value of sugar, syrups, etc., imported, reached seventy million eight hundred and two thousand three hundred and ninety-eight dollars and sixty-nine cents, paying duty to the amount of thirty-two million five hundred and eighty-five thousand one hundred and twenty dollars and sixteen cents. These facts should stimulate us to positive and decided action, so far, at least, as to stop the money drain from our own State caused by the importation of sugar, syrups, confectionery, etc.

VARIETIES OF THE SUGAR BEET.

The white Silesian—a white beet root with a green collar—is the one in general cultivation throughout the world for sugar making. There are four distinguishing characteristics that apply to the beet most perfect for the secretion of saccharine matter:

First—Its root must be shaped nearly like a Bartlett pear, and devoid of large lateral roots.

Second—It must not grow above the surface of the soil.

Third—It must have a smooth, white surface, and the flesh be white and firm.

Fourth—Its size must not be too large, and its weight not exceeding three to six pounds.

The white Silesian unites most of these qualities. The foliage is not upright, but broad—spreading and lying flat upon the surface of the ground. Beets possessing this peculiarity grow entirely beneath the surface, and readily secrete the greatest amount of saccharine matter during their growth and ripening.

THE PROPER SOIL.

All land to be used for the growing of the beet for sugar making—whether it be a sandy loom, calcareous, argillaceous, or of any other character—must be free from saline and alkaline constituents. The beet root is a great absorbent of these constituents, and if planted in soils having these salts preponderating to any great extent, will always secrete these salts, to the great prejudice of the saccharine or sugar making quality of the root. The beet will thrive and grow well upon these alkaline soils, and, if grown for stock feed, will produce more pounds to the acre than if grown on sweet land. It has been fully demonstrated that this variety of beet, whether grown for sugar or stock feed, is far above any other variety in value. The growing of the beet upon these saline and alkaline soils is the most perfect and cheapest method of reclaiming them from these destructive mineral salts. The rankest alkaline lands, after being cropped three successive years with the beet, will become kind and sweet, and will thenceforth produce heavy crops of wheat, barley, and corn, and is also well adapted for orchard planting, and whoever has this character of land to cultivate can make it profitable to raise beets for stock feed, and at the same time reclaim his land for any other agricultural pursuit. A deep, rich, sand-alluvial soil, with an open porous subsoil, is the very best land to produce the most favorable results in the cultivation of the sugar beet, both as to quantity and quality. Other soils, however, are well adapted to the culture of the root. Clay and sand, at the same time somewhat calcareous, deeply plowed, and finely pulverized, will give good results. Argillaceous soil, heavy and stiff, must be improved by draining, in order to fit it for the cultivation of the beet. The root, however, on these soils is liable to suffer from drought and wet.

PLANTING AND CULTIVATION.

There are two ways for planting the seed—in drills and in hills. In Europe the latter method has been practiced of late years. In preparing the land for either method, it should be plowed deep during the Winter—at least twelve inches. California has a vast advantage over Northern Europe and the Atlantic States in this department of the industry. There they are compelled to wait patiently for the Spring thaw; here we can commence as soon as sufficient rain has fallen to mellow the ground, and we can have our beets all planted before they have got cleverly to work. All stiff calcareous and argillaceous soils should be cross-plowed and thoroughly pulverized before planting. If the planting is to be in drills, lay off the drills about thirty inches apart. If the planting is not to be very extensive, it can be done with a common marker, with four to six teeth set thirty inches apart, and the seed dropped very fast by hand through a long trumpet-shaped tube, large at the mouth and small at the lower end, the planter walking alongside of the drill and holding the lower end of the tube in the drill while dropping the seed in at the mouth. If large fields are to be planted, it will pay to get a large drill machine, worked by horse-power. The planting with us should begin, if on upland valleys, about the middle of January; if on the low bottom lands, the middle of February is early enough. The cultivation should be thoroughly done, both by horse and hand-power. If the planting is to be in hills, the hill may be formed by

using a small double plow, running furrows at equal distances apart one way, then crossing at right angles, so as to have the hills about twenty-four inches apart. This method facilitates more rapid and thorough cultivation, and is fast superseding the older methods in Europe, as more abundant crops can in this way be produced. In either method, it is imperative that the crops be very carefully weeded and cultivated. The amount of seed required to plant an acre will be about fifteen pounds. After the roots begin to form of considerable size they should be carefully hilled up by drawing the earth over the crowns as effectively as possible without covering the foliage. This is necessary to prevent too rapid and unnecessary formation of woody fiber, which detracts very much from the value of the root for sugar purposes. The crop will be ready to dig about the last of September on bottom land, and I think if grown in our large valley districts where, I believe, by the aid of irrigation and long planting, we have thousands and thousands of acres of the finest sugar beet land, it could be gathered, or sugar-making could commence, as early as the first of July—the beet roots being well and sound, after being dug, until about the first of April, when the sap begins to start, then they lose their sugar properties very fast.

THE PRODUCT OF SUGAR.

I have been informed by a scientific beet sugar maker that he has extracted from beets grown near Sacramento fifteen per cent of saccharine matter. The working average in the factory is fully eight per cent, if not more.

THE MANUFACTURE.

We will now make a rough calculation upon this basis. The same gentleman informed me that five dollars per ton would pay all expenses for manufacturing the beet into sugar. Now, we will allow five dollars per ton for the cost of the beet, and one hundred and fifty thousand dollars for the erection of the manufactory, capable of converting fifty tons of beets daily into sugar, and two hundred working days for the year; the accounts will stand thus: Interest on one hundred and fifty thousand dollars, at ten per cent, fifteen thousand dollars; cost of ten thousand tons of beets, at five dollars per ton, fifty thousand dollars; cost of working up same, fifty thousand dollars; total cost, one hundred and fifteen thousand dollars. Sugar produced from ten thousand tons, at eight per cent, one million six hundred thousand pounds, valued at twelve and a half cents per pound, two hundred thousand dollars; deduct one hundred and fifteen thousand dollars; leaving a clear profit of eighty-five thousand dollars.

This calculation, I am fully satisfied, does not overrate the profits in this grand industry, when parties avail themselves of all the modern improvements of the age as to manufacture and production of the sugar. As to the beets of California producing as much or more sugar than any other part of the world, we have only to consider the advantages of soil and climate. In Europe very often the beet root is injured by continual wet and humid atmosphere. The solar rays are obscured, and the root will secrete a much larger per cent of water, pectine, albumen, etc. Again, the crop is more liable to suffer from drought. In fact, the climate casualties there and in the Atlantic States are at least fifty per cent greater than here; and I am fully convinced that in a few years, if the necessary reforms shall be brought about by our law-

makers for the encouragement of this, as well as many other industries now only awaiting such action, that we shall see this, the sugar interest of this State, grow to immense proportions.

REFORMS.

The first reform that I shall mention is a radical change in the programme laid down for the conducting of our Agricultural College. Let there be established immediately a branch of Agricultural Chemistry, where the different processes used in this manufacture shall be taught, that our own sons may be taught the science. Second, let the Legislature repeal the Specific Contract Act, that money may become cheaper. Third, let them also pass a No-fence Law, to induce immigration to our State.

FREIGHTS AND FARES.

Fourth, regulate freight and passenger tariff by rail in this State—especially the local roads—not, however, in a spirit of factious opposition on general principles to the railroad interest. The reform, to my mind, is necessary and paramount to all others mentioned, before we can hope to see the great agricultural wealth of the State developed. Let the people, then, give to the railroad interest every encouragement and reasonable accommodation, both in land and money subsidy. This has been done. Fifteen cents per mile per ton of freight, and ten cents per mile fare, is simply a prohibition of freight and travel, and at the same time, to the intelligent man who would willingly settle upon land in the interior of the State, is a complete bar. No intelligent man will put himself and the labor of his head and hands, and the wife and little ones of his household, in a position to be legally starved to death. No, no! He must know what contingencies he must provide for before he will thus settle.

But it has been said that the company never exact those rates. Then, if this be the fact, which I do not admit, we, as a people, are mere lick-spittles for the great monopoly to allow this law to stand, a perpetual and constant menace, to be used by them to intimidate the public, and especially the farmers, forcing them to be very circumspect how they express their opinions upon railroad matters. I think that the gentlemen composing this great company ought to be satisfied to receive and own the millions that have been given them—and which we are willing they should have—and not to ask the people to allow them to collect revenues that will pay them interest on these vast gifts. They ought not and should not be allowed so to do.

I have no doubt that any community or place adapted to the growth of sugar beets, that will offer a subsidy of two hundred thousand dollars in bonds and lands, will find any number of competent gentlemen who will give bonds to erect a manufactory, grow the beet, make the sugar, sell it at reasonable price, pay their taxes, and not ask the people to pay them interest on the two hundred thousand dollar subsidy.

RAISIN CULTURE IN CALIFORNIA.

BY I. N. HOAG.

There is a strip of country, say about twenty miles wide, on the western slope of the Sierras, and extending from Butte County to the southern extremity of the State, that may be set down as generally well adapted to the growth of the raisin grape and to the drying or curing of the fruit. Along the western slope of the Coast Range, stretching through the State from the same points north and south, but narrower in extent, is another strip equally as well adapted to the same business, with the exception of some points where the winds and fogs from the ocean sweep through a depression or cañon. In designating this strip by towns, we would name Folsom as about the lower or western boundary and Coloma as about the higher or eastern boundary.

This strip or belt of country produces a richer and drier grape and a grape of a better pulp than is produced higher up the mountains or lower down towards or in the valleys. The reason is that the atmosphere in this belt is more even, as between day and night, than that of a greater or less altitude. When you get above Coloma the dews continue later in the Spring and commence earlier in the Fall, and are more abundant. The same is true as to rain. When you come into the valley or brow about the altitude of Folsom, you are more or less within the influence of the sea breeze; the atmosphere is damper even in the daytime, and more so in the night. The south winds that sweep up the valleys in the afternoons come more or less charged with humidity from the sea, and as the sun goes down this humidity is precipitated to the earth as dew. Grapes are affected by the condition of the atmosphere in which they are grown, and hence it is easy to see why grapes grown either above or below the belt of country named would contain more water, and less pulp and saccharine matter, than those grown within that belt.

CURING GRAPES.

The facts which we have named above, as indicative of the best location for growing raisin grapes, point with equal force to the same locality as the best for drying or curing them.

A dry atmosphere, both day and night, and a uniform heat, as near as may be, are the circumstances or conditions favorable to curing grapes. In the belt of country we have indicated there is no dew of any account from July to October to dampen or check drying fruit, and except for the purpose of retaining a greater degree of heat during the night, a cover at any time would be unnecessary. In the latter part of Summer the surface of the earth in this part of the State becomes quite warm, and the atmosphere, close to or on the earth, retains that heat at a greater degree during the night than at a greater elevation; hence, in drying fruit of any kind, the nearer the ground they are placed the

more rapidly they will dry, and particularly in the case of raisins, the better and higher flavored they will be. In the European raisin-producing countries they make a sort of adobe floor on the ground, looking to the south, with adobe partitions running north and south, say a foot high, and headwalls at the upper and lower ends. Upon this floor the bunches of grapes are laid, and a canvas or cloth awning is arranged, with a roller like an awning, to roll up in the daytime and down in the night. This awning is there necessary to keep off the dews, and answer, at the same time, to keep in the heat that accumulates during the day. For the former purpose it would not be necessary here; but for the latter, while it would not be a necessity, yet it would add very much to the rapidity and perfection of the work, and the expense would be but trifling.

While the grapes are thus exposed to the action of the sun, they are turned over in the bunch each day, and as soon as any bunches are sufficiently dried, they are removed from the drying place and packed in boxes for the market. This latter practice becomes necessary to prevent any from becoming too dry. Like figs, raisins are ruined or very much injured by being overdried, and like figs, they go through a mellowing process after being packed; and to secure the perfection of this last process, they must be packed in just the right condition. To be able to judge of this condition, some experience and skill is necessary, but this skill is soon acquired by experiment and observation.

Some people have an idea that it is necessary to dip the grapes in a lye or other composition before putting them to dry; but this is a mistake. They should be picked from the vines when very ripe, and placed immediately in the hot sun, to cure in the natural state. They require the influence of the sun to give them the proper raisin color, as the best raisin grapes are of the white or green varieties.

VARIETIES OF GRAPES FOR RAISIN MAKING.

There are a number of kinds of grapes used for raisin making. In this State, the Malaga, Muscatel, the white Muscat of Alexandria, the White Malaga, the Fahir Zagos, the Flame Tokay, and various other kinds, have been used experimentally; but the three first named have been found the best, and their excellence is in the order in which they are named. The two first named are richer and higher flavored than the white Malaga, and make a higher-flavored raisin, while the first named is superior to the second, from the fact that its skin is a little more delicate or tender, and it is a little earlier in ripening, thus allowing the work of curing to commence sooner in the season.

PROFITS OF RAISIN CULTURE.

We have no data or figures by which we can give the financial results of any experiments in this business in this State; but we would say that in a country where the vine produces so certainly and so abundantly as here, where there has never yet appeared any insect or other enemy to endanger to any extent the crop, and where the climate is so favorable for securing in the fruit the requisite properties for curing it so economically, and where there can be no competition for supplying the ever present and extensive demand, except at so great a distance from us, it

seems to us that raisin culture, properly conducted, can be made one of the most remunerative of industries. In confirmation of this view, Mr. B. N. Bugbey, who has made and sold more California raisins than any other man, and than perhaps all others in the State, says, in a late statement to the State Board of Agriculture, that he is so well satisfied on this point of profit, that if his wine and brandy did not employ all his capital and time, he would at once enter upon the culture and manufacture of raisins upon a large scale. There are a plenty of cuttings of the best varieties in the State. Among those who, we know, have them, we may name Mr. Bugbey, J. R. Nickeson, Robert Chalmers, and many others.

BLIND DITCHES.

There are a very few farms, even in this State, that would not be greatly improved by a proper system of drainage. Every sinkhole where the water settles and stands until taken up by evaporation would be greatly improved if it could be drained. Many of these low places have become what we call "alkali spots." The soil has become compact and clammy, and hence dead and unproductive. It wants something to enliven it up and reclaim it. Such spots generally possess a greater amount of the fertilizing elements than any other land about them. These elements have been collected there by the water, but at the same time the water has concentrated too much of other ingredients, and thus rendered the fertilizing qualities dormant.

The blind ditch is the most effectual way to accomplish both these objects. Where stone is plenty they are generally used to make these ditches—sometimes tiles and lumber. In this country, especially in the great agricultural districts, stones are scarce and lumber and tiles are too expensive.

A very good substitute for these materials is common oak brush, or any other kind of brush that will lay up light and last well under ground. Let the ditch be dug to the proper depth and of the proper size, then throw in the brush and settle it down well. Then cover with straw or weeds to prevent the dirt from falling into the crevices too much. This being done, cover over with dirt.

We have seen ditches made in this way answer equally as well and fully as effective as those made with stone. Being entirely under ground, the brush will not decay to do any harm for many years.

ALFALFA.

BY I. N. HOAG.

TIME OF SOWING.

There is much difference of opinion among those who have had experience in cultivating this grass as to whether the seed should be sown in the Fall or Spring. Our experience, and we have had considerable, besides an extensive observation, is that if the Fall is favorable—that is, if we have early Fall rains followed by warm growing weather, it is much better to sow in the Fall. If, however, the rains hold off late, and the weather is cold and frosty, like the present season, then it is better to wait until a favorable time in the Spring. The reasons are very plain, and are these: If the rains are early and followed by warm weather, the young clover will get a sufficient start and the roots will penetrate the earth to a sufficient depth to withstand any cold and frosty weather that will be likely to follow, and the clover will grow all Winter, or through the rainy season, and be sufficiently forward to mow the first time in May, or the very first of June. Under these circumstances, all things being favorable, three crops of hay may be taken from the land the first year; or, what is generally better, two crops of hay and one of clover seed. By allowing the last crop to mature it may be cut for seed and thrashed with a machine like wheat or barley, and the straw and chaff will still make good fodder for cows or sheep. Under circumstances as indicated above, it will be better to sow the seed alone, as by so doing the land will be better economized than if wheat or barley were sown with it.

If, on the contrary, the rains hold off till late and the weather be cold, the small clover, if sown in the Fall—if it start up at all—will be most sure to be killed out by the frost, and the seed and use of the land for that purpose will be lost; but should any one conclude to sow his clover seed in the Fall, notwithstanding the unfavorable weather, then it will be safe to sow wheat or barley with it. First, because if the clover does not come up, he will still make a crop of grain; and second, that if the clover seed does start then the growing grain will cover and protect it while small, and will thus be a benefit to it.

SPRING SOWING.

If the seed is to be sown in the Spring, then it should be sown early—just as soon as the danger from frost is past—so that the roots will penetrate the ground sufficiently deep to withstand the blasting north wind and dry hot sun. There was but very little Chile clover sown last Fall or Spring that was successful, for the reason that although much of it came up well and promised a success, we had an early dry and hot norther, followed by continued hot and dry weather, which effectually

dried it up and killed it. We had fifteen acres that came up as well as we ever saw any, and had got three leaves on it, and then was ruined in this way.

We believe that for Spring-sown alfalfa, it is generally better to sow a light crop of wheat or barley with it to protect it from these winds and drying hot sun.

PREPARING THE GROUND.

Whatever be the nature of the soil, it should be plowed deep and well pulverized and rolled level before the seed is put on. Then if you can take time and sow it just before a good rain, the seed need not be dragged or cultivated in, as the rain will do this part of the work sufficiently. But generally it will be safer after sowing to run the roller over the land the second time, or drag a light brush over it.

QUANTITY TO THE ACRE.

Twenty pounds to the acre is generally considered sufficient, but as this kind of grass is better for hay if grown thick on the ground so as to make the stems small, we would recommend to put on about twenty-five pounds.

Following we give extracts from a letter written by Nicholas Wyckoff, of Yolo County, one of the earliest, most extensive, and successful cultivators of this valuable grass in the State:

"It is well to fallow the ground when possible, and having the ground in fine tilth it may be sown before the rains in the Fall with good success, if the rain is abundant and warm, and then followed by a second rain to prevent its drying before taking root. There is poor promise here of succeeding in that way this season, as it is getting so late without rain that when it comes it may be too cold to germinate well. The best time here has proven to be in February, when the cold weather is usually over and the ground is becoming warm; it starts then and grows rapidly. Although it grows best in a warm soil and warm weather, it stands quite a measure of frost even in a young stage.

"Plow deep and thorough, let it remain, say, until the last of January, then put the ground in fine tilth, sow from fifteen to twenty pounds to the acre and brush or roll after sowing, but do not harrow, as it places the seed too deep. It germinates on or near the surface. Do not sow anything with it; it has been tried repeatedly in this county; it is but an injury. It is a benefit to graze it moderately, as soon as the growth is sufficient and the rains are over. Horses and mules will, if stinted, paw after the root, and hogs will entirely destroy it. Cows are the best stock to graze it the first year.

"It yields from six to eleven tons per acre per annum. I cut mine this year three times. It is not equal to wild oats for hay, but with free use with grain it is sufficient. For milch cows it is superior to any other hay; it excites the secretions. To make good hay it should have been in bloom at least ten days before cutting.

"When it is grazed by cattle and sheep it sometimes gives them the 'hooven,' sometimes called the colic. They swell up quickly and burst within, and death ensues. Cattle are only liable to it when the alfalfa is making a rapid growth in the Spring, and they fill themselves quickly. When it is grazed closely it does not occur. It should receive attention and be cultivated everywhere throughout California, where a suitable

soil may be found. Generally a good soil for wheat is a good soil for alfalfa. All alluvials are good; also muddy loams; dry, fertile lands that may be irrigated are still better."

We can see no reason why alfalfa should not do as well in any part of Oregon as in California. It is a native of Switzerland, and does well in our Sierra Nevada mountains as high up as Placerville, also in the State of Nevada and Utah Territory. There is no doubt that it is the most valuable grass for California that has ever been introduced. It is the only grass that will grow through our dry Summers and produce constant green feed without irrigation. We are assured by those who have pastured sheep on it, that one acre of good land well seeded to alfalfa, will keep forty sheep in good condition the year round; that sheep kept on this grass produce a better quality of wool than those which are pastured on the native grasses; the staple of the former being uniform and of vigorous growth, while that of the latter has weak places in it, in consequence of a check in its growth corresponding with the check in the growth of the grass during the dry season. We are glad to learn that many of our sheep men are preparing to seed portions of their ranges this season with alfalfa.

ALKALI SOILS.

BY E. F. AIKEN, OF SACRAMENTO.

The matter under discussion is still an open question, and it will require something beside mere theory to bring about a satisfactory result, to my mind.

I have not the presumption to say that a few croppings of a particular kind of vegetable known to have a peculiar affinity for the alkaloids in these soils will reclaim them and bring them into such a state that they will readily grow and mature any crop the cultivator may feel disposed to raise. The best method for reclaiming these soils is yet to be learned by experience, and it will require science—science combined with agriculture in its true sense—to bring about the desired result.

When we speak of uniting science with agriculture, we have reference to science in its broadest sense. A science, technically speaking, is a particular branch of human knowledge which has been systematized, its principles and rules defined, its department circumscribed, and arbitrarily established. In this respect chemistry and physiology are sciences; but the science we wish to bring into action to accomplish the end in view is that science which is the observation of nature, the accumulation of facts and figures, and the inferences to be deducted from them for practical application and use. Positive knowledge is what we want; belief in theory is not knowledge. What we learn by practice and experiment are facts.

Nature does her work by fixed laws; she is not a confused mass of matter and things, ever changeable, doing one thing to-day and to-morrow the reverse. All the minute and different parts of nature in their relations with each other are mutual and exact. There is a reason for everything, and a fixed rule by which everything mysterious is controlled and directed. There are many things concerning the laws of nature beyond our comprehension. There is nothing which should be beyond our inquiry.

There is a mysterious and wonderful power always at work in the vegetable world, from the germination of the seed we plant through the progress and development of its vegetable life. The relation of the different soils to the plants produced, the peculiar effects of heat, light and air, rains and droughts, their uses and results, are all more or less mysteries to us; yet from observation of those works of nature which are every day revealed to us, we can have no doubt that all these mysteries rest upon established principles and fixed laws. The finding out by investigation and practical experiment any of those so-called laws is positive knowledge, and, properly speaking, science.

This is the science that must be brought into combination with a thorough working and cultivation of these soils before they will be reclaimed. This is a subject that essentially concerns the people of California, as in all parts of the State, especially in our valleys near streams

and watercourses, there are extensive tracts of these soils that in their natural state produce nothing valuable, which might be made eminently productive, as advantageously to the health of the people living in the immediate vicinity as to the pecuniary profit of the owners of such lands. We will admit that these soils have in their composition all the elements necessary for the growth of the fine grasses, vegetables, and cereal grains, and if the nature of the soil was the only circumstance to be taken into consideration, the whole subject would be greatly simplified and easy of solution; but the aspect and elevation of the land are quite as much concerned in every question connected with the subject. The character of the soil in its native state is such that it not only retains the water stagnant upon its surface, but it is impervious to the roots of plants, especially of those plants which send their roots downward in search of nourishment; it is likewise extremely difficult to work in wet weather, being sunburnt and hard, and when turned up with the plow, remaining in large and unmanageable clods.

The first step in the progress of reclamation should be drainage by ditches. A good rule would be to make the drains of sufficient depth to take away all the water completely as low as three feet. It is impossible to lay down rules applicable to all places, or the distances the drains should be made from each other, so much must depend upon the quantity of water to be removed during the rainy season and the descent or fall to carry it off. These are matters left to the intelligent cultivator, consequent upon circumstances.

Without drainage, these soils can rarely be plowed and worked properly as early as they ought. An excess of water in the soil renders it very difficult and often impossible to work, prevents the access of the air, and reduces the temperature of the soil. Under-draining may well be called a shorthand way of virtually subsoiling, or plowing the ground three feet deep instead of ten inches or less; for by reducing the general water level in the soil, especially if inclined to be wet, it increases its power both of attraction and absorption, such as very deep plowing would do. There is no branch of agricultural industry that will do so much towards a solution of this question, and I am satisfied the result will be in the highest degree valuable and important.

The question whether the drainage and reclamation of these soils will pay involves a variety of considerations, and some of a strictly local character, and which must be considered by those who propose to undertake it. There are considerations connected with this subject which are not to be measured by a pecuniary standard—I mean, for example, such as refer to the health of the locality. The miasma and dampness arising from these soils in their natural state are a prolific source of ill health and sickness, such as fever and ague, and consumption. The cost of reclamation may in some instances be more than the land is worth after being reclaimed, or it may be quite equal to its value; but if it be worth nothing in its original condition the operation may be considered as an actual purchase of the land. The useful employment of one's capital and labor, together with the real satisfaction which one finds in having accomplished a good work, may operate as a strong inducement to such an undertaking.

The next move toward reclaiming these lands is deep plowing and thorough and careful cultivation, with the free use of the best fertilizers that can be procured. In other words, to keep the soil in the best possible condition for the absorption of heat, moisture, gases, and fluids indispensable to vegetable life from the sun and atmosphere above, and

for the free attraction of all their earthy constituents from the depths of the soil below. We can safely say that no soil can be made too fine for any crop within a given depth. The finer the better. In general cultivation it is left too coarse for all crops. Finally, and by no means the least important, a systematic cropping of such vegetables as are known to readily absorb and retain in their composition an excess of the alkaloids.

And now, gentlemen, it is immaterial to me whether I or any one else can scientifically demonstrate what I have said to you; yet I believe these principles to be substantially true, and I am satisfied that all who go to work and faithfully carry out these principles cannot be led astray in the practical result.

THE CULTURE OF SMALL FRUIT.

BY. E. F. AIKEN.

This is a subject that is comparatively new to all of us, although rapid strides have been made within the past ten years in the propagation and dissemination of new and valuable sorts of all the small fruits. There is a great difference of opinion among growers of these fruits concerning the best mode of propagation, cultivation, and pruning, and the adaptation of the different sorts to the various soils and locations; and it may be truly said, we have hardly begun to cultivate them understandingly. We have only to look back to a period within our own memory to ascertain about all that has been done in the artificial improvement of the small fruits. Question any of our fruit growers concerning the fruits to be found on our market-stands thirty years ago, and they will tell us that the fine sorts of cultivated berries to be found so plentiful during their season, nowadays, were then unknown. There were no Jucunda, Trionphe De Gand and Wilson strawberries, no Wilson's Early or Kittatting blackberries, no Clarke, Davidson, Thornless, and Mammoth Cluster raspberries, and numerous other sorts as valuable, that might be mentioned, which have been brought from a wild state to their present condition of excellence by hybridizing and other modes of propagation known to our skillful horticulturists. Our markets, in those days, were wholly supplied with such small fruits as the woods and uncultivated fields could produce; nature, without the assistance of man, supplied them in such quantity and quality as to satisfy the demand for the then uncultivated tastes of the people. The supply was limited, the demand was light. I will venture to say there is not one of us but that in recalling the pleasant associations of our boyhood days, can recall none more vividly than the holiday excursions after strawberries, raspberries, and blackberries, regardless of the two or three miles tramp through the sweltering sun, rambling over the fields, gathering, perhaps, from two to four quarts after a hard day's work, including innumerable scratches and falls. What a change has been in these fruits since those days. The increase of population has been such that such a source of supply was not equal to the demand. Hence came the necessity for our horticulturists to make use of their science, and assist nature to unfold some of her most useful and valuable fruits, which had remained hidden until touched by their skillful hand.

Through the scientific management of our horticulturists, we have now many new and better varieties of all our small fruits in general cultivation, while under the same skillful management more are being added to the list every year. Originators of these new sorts are stimulated to great exertion by their knowledge of what has been accomplished, knowing, too, that if successful in bringing out a new variety of great merit, they will be well rewarded for their labors.

The market stands of our cities are now loaded with the choicest sorts

of all these fruits in their season, and yet the price in most of our markets is as high, or higher, than years ago. This may, in a measure, be accounted for by the cultivated taste and increased demand, which has far outstripped the increase of population.

We are aware that there is a general desire for information on the subject of growing small fruits. Many of our small farmers and others are turning their attention to it as a business, and many families who have a few rods of land in cultivation, could, by using some discrimination in planting the proper kinds to keep up a rotation, have their tables supplied from April to November with the most healthy and desirable fruits.

The facilities for procuring plants of all the new sorts of our nurserymen, and from abroad through the mails (which charge only half a cent per ounce, and allow packages of four pounds weight to be carried), though not as yet half appreciated, has stimulated many to great exertion in small fruit growing; and many acres are now planted where but a few years ago there were none. With a constantly increasing demand many more will turn their attention to growing these fruits. The business is not now considered an experiment, but an established and successful occupation; and like growing the larger fruits, if prosecuted with energy, skill, and economy, will return corresponding profits.

The skill necessary to grow these fruits successfully and with profit must be learned by experience, as well as other things. The main object of most persons who cultivate them for market is profit, and to secure the greatest return for the capital invested, several points must be carefully considered.

First, and one of the most important, is the location of your grounds. Procure your site as near the city and your market as possible. Land within a mile of town is cheaper at two hundred dollars per acre for this business, than the same quality of land three miles away at one hundred dollars per acre. If you will calculate the difference in interest on the cost of the land first mentioned, and compare it with the many disadvantages you will labor under in being far from market, inconvenience of procuring help at a critical time, wear and tear of teams, etc., you will readily perceive the importance of a good location.

Next, use careful discrimination in selecting the kinds of fruit that succeed best in your locality, and such as will keep up a rotation throughout their season. Visit the grounds of your neighbors who are successful fruit growers; have your wits about you and your eyes open; ask questions about everything new to you, and you will get more practical information in an hour or two spent for the purpose, than you can get by reading all the essays ever written upon the subject.

It was not my intention to enter into a description in detail of how to grow small fruits. The subject, thus treated, would fill a volume, and necessarily create an elaborate discussion of particular theories relative to the different plants, locations, soils, and fertilizers for the different sorts, etc., and cannot be contained in a short essay. I shall, therefore, confine my remarks in this connection, to a few of the leading and most valuable sorts of raspberries and blackberries which I have under cultivation on my ground, and of these can speak from experience, leaving other varieties of fruits for members to discuss who can speak of them from the same standpoint.

The raspberry is one of the most delicious berries we have, coming, as it does, directly after the strawberry; in fact, the earlier sorts of this

indispensable fruit ripen with the late sorts of the strawberry, and we find them on the stands in the market together rivals for public favor, thus keeping up the succession of the early fruits. Within a few years several new and excellent varieties have been added to the rest, which has lengthened the season for raspberries materially.

PROPAGATION.

The raspberry is propagated, according to the habits of the different sorts, by suckers, by roots and root cuttings, by layers and by tips. Most of the varieties under cultivation are readily propagated by suckers from the roots. The manner in which I generally propagate the varieties that sucker readily, is to dig up the roots in the Fall—after the plants become dormant—and with pruning-shears cut them into pieces two inches long. These pieces are planted in ground carefully prepared for the purpose, in drills fifteen inches apart, and two inches apart in the drill, covering about three inches deep. If properly managed they will grow as readily as so many peas, and by the following Fall will have made fine plants for setting, if they receive the care generally given to a crop of beets.

There is one species, however, which, as a rule, does not multiply readily in this manner—I refer to the Black raspberry or Black Caps. This variety is generally increased by the tips, or ends of the canes, bending over and taking root in the ground—the end of a single cane with its branches often making a dozen plants. In our warm and dry climate they require more assistance by covering the tips with soil and watering, than they do in the East.

PLANTS.

The canes of all the varieties of this class of fruit are only biennial. The fruit is borne on wood of the previous year's growth, which dies in the Fall and is replaced by new wood for fruit the following year. One year old plants are always to be preferred for planting; plants grown from root cuttings, as before described, if well grown, I consider the best, because furnished with a larger number of fibrous roots. Those sorts grown from the tips of the canes, (the Cap family,) it is of more importance to select one year old plants for setting, as older plants are more likely to fail with the best of care.

PLANTING AND CULTIVATING.

The land selected for planting should be thoroughly and deeply tilled. If you have plenty of land, and it is desirable to do most of the work with horse and cultivator, lay off the ground so that the lines or furrows will be six feet from center to center, and set the plants at the intersections of the furrows.

The plants in this climate, especially if the soil is light, should be set two or three inches deeper than they were in the nursery. Spread the roots carefully and tramp the dirt firmly, leaving about six inches of the wood growth above the ground, to indicate the position of the plant. Pressing the dirt firmly about the roots is a very important matter. The new growth should start from the ground, and but two canes allowed to grow the first season. As soon as the young plants can be seen, work them out clean with cultivator and hoe, and keep them well

worked throughout the season. The first season should be devoted to the growth of as much strong, stocky wood as possible. Cut the canes back in August, and pinch off the side branches in proportion. This severe pruning must be resorted to to insure a substantial growth for the next season. A crop of vegetables can be grown to advantage the first season between the rows, which will be more likely to insure good cultivation.

PRUNING.

The operation of pruning the raspberry is simple. In general field culture but little is given except to cut out the old wood to the ground in the Fall. It is well, however, to shorten the leading shoots of new wood, and cut back the lateral ones. This operation is very necessary with the Black Caps, as their long, slender branches would otherwise be broken down with the weight of the fruit. I think it advisable to cut back severely all varieties of this class of fruit. The result of such pruning is much larger fruit, and the weight per acre as much or more than if the canes were left their full length.

TRAINING.

The best mode for field culture is to train to stakes. There is nothing saved by trying to cultivate without stakes; many of the canes will be broken down by the wind, by the horse passing through, and by weight of the fruit. The cost of the stakes is trifling compared to the loss of fruit by not using them. Every stake will save three times its cost in fruit and convenience of picking in a single season.

VARIETIES TO CULTIVATE.

The following are among the leading and most valuable sorts to cultivate for market:

Davidson's Thornless—this is one of the earliest varieties of the Black Cap family; it is a profuse bearer, very sweet and fine flavor, and its being without thorns is alone sufficient to make it desirable. The Miami, Seneca, Black Cap, and Golden Cap, are all favorite sorts and valuable. The Mammoth Cluster, following the abovementioned, and the latest of the Black Caps, is the most prolific bearer; very large, and fine flavor.

Following these we have the Purple Canes. The flavor of the fruit of this variety is distinct from Black Caps; the color generally red; the growth and habit of the canes is different, and they are propagated from the roots. The Philadelphia is undoubtedly the most prolific of this sort, of good size, and fine quality.

The Clarke is a new and very valuable sort for our climate; its large, thick, and heavy foliage being well calculated to protect the fruit from our hot sun. I think it better adapted for our climate in this respect than any I have grown, though there are other sorts that no doubt could be successfully and profitably grown here.

THE BLACKBERRY.

This is another very desirable and almost indispensable fruit. It belongs to the same family and genus as the raspberry, and has the same general characteristics, and the same method of propagation and culti-

vation are applicable to it. It does not require a soil as moist nor so rich as the raspberry, as it is a larger and coarser growing plant. If the soil is very rich, the canes will make a very rank growth, and will not produce as much fruit as those of moderate growth with well ripened wood. If it is intended to cultivate them both ways, the plants should be set eight feet apart; if in hedge form, three by eight feet would be a proper distance.

VARIETIES FOR CULTIVATION.

The New Rochelle or Lawton, until quite recently, was considered the leading berry for market. It is a vigorous growing sort and very productive fruit of the largest size, black and juicy, but does not become sweet and palatable until too soft for market. Within a few years new and better sorts have been introduced which bid fair to supercede it. It is one of the latest varieties now in cultivation.

The Dorchester is one of the earliest as well as one of the best market varieties. Fruit—long, black and sweet as soon as it colors; it is a vigorous grower, moderately productive. It is followed by the Wilson's Early, a new sort and a valuable acquisition; it is a very large berry, long, oval, shiny black, firm, rich, sweet, and good; it is a profuse bearer, and needs to be well cut back or it will bear more than it can mature; it ripens its fruit very early and continues in bearing but a few weeks. Before the Wilson's Early are gone the Kittattinny is ready for market. This is an old variety, though new to the public. It originated in New Jersey, on the Kittattinny mountains, about twenty years ago. Within a few years its true merits have become known, and it is now being very extensively disseminated. The berry is very large, deep, shining black, long, oval form, rich, sweet and excellent, with the old wild blackberry flavor. I place the Kittattinny at the head of the list of blackberries; it has no equal, in my estimation, among blackberries, and will, before long, supercede all others now in cultivation as a market variety. I have several other varieties under cultivation, but do not consider it worth while to speak of them, as the above mentioned sorts I consider the leading ones, and the most valuable varieties now in cultivation, and with these we can have berries of the finest flavor, from June until October. The cost of cultivation of these berries I should judge to be about one fourth of the gross receipts obtained from sales of the fruit, if we include the picking. The profits to be derived from an acre of berries is a matter of speculation. When other fruits are abundant in the market, blackberries often rule very low.

REPORT OF THE ORGANIZATION AND PROCEEDINGS

OF THE

CALIFORNIA

Vine Growers' and Wine and Brandy Manufacturers'

ASSOCIATION,

BY THE CORRESPONDING SECRETARY.

This Association was organized on the twenty-first of February, eighteen hundred and seventy-two, and the following Constitution was adopted:

Section 1. This Association shall be known as the "California Vine Growers, Wine and Brandy Manufacturers' Association."

Sec. 2. The objects of this Association are: encouragement and improvement in all departments of the wine industry.

Sec. 3. The officers of this Association shall consist of a President, two Vice Presidents, a Secretary, and Treasurer, who, together with four Trustees, shall constitute a Board of Directors.

Sec. 4. The officers and Trustees of the Association shall be elected annually, on the fourth day of the Annual Fair of the State Agricultural Society, and shall hold their offices for the term of one year from the first day of the succeeding month, at which time all memberships shall expire, unless renewed by payment of the annual dues.

Sec. 5. The office of the Association shall be at the Capital of the State.

Sec. 6. The Board of Directors of the Association shall have the general management of its affairs, and shall provide for an annual exhibition of the products of the vine, in connection with the Annual Fairs of the State Agricultural Society, and may offer such premiums as they may deem necessary to bring out a full exhibition. They may make such rules and regulations to govern the same as they shall find expedient. They shall make an annual report to the Association at each annual meeting, such report to include the facts and statistics collected, and general information gained, on the subjects for the encouragement of which the Association exists, together with such suggestions as the situation of the industry may seem to require; also, including the receipts and expenditures of the year.

Sec. 7. The Secretary shall receive all funds of the Association and pay the same over to the Treasurer, and keep a correct account of the

same, which shall at all times be open to inspection by any member of the Association. He shall also conduct all the correspondence of the Association, and perform such other duties as usually devolve on Secretaries of similar associations, and shall receive such compensation for his services as the Board of Directors shall determine.

SEC. 8. The Treasurer shall receive and receipt for all moneys of the Association paid him by the Secretary, and pay the same out on the order of the Board of Directors, signed by the President and Secretary. He shall submit an annual report of receipts and expenditures to the Board of Directors previous to each annual meeting of the Association.

SEC. 9. Any person interested in the objects of this Association may become a member thereof by paying to the Secretary the sum of two dollars and fifty cents, and one dollar annual dues thereafter.

SEC. 10. This Constitution may be altered or amended at any annual meeting of the Association by a two-thirds vote of the members present.

FIRST BOARD OF DIRECTORS.

President—B. D. Wilson, Los Angeles. Vice Presidents—A. Schell, Knight's Ferry; B. N. Bugbey, Folsom. Secretary—I. N. Hoag, Yolo (P. O. address, Sacramento). Treasurer—J. H. Carroll, Sacramento. Trustees—Wm. McPherson Hill, Sonoma; J. R. Nickeson, Lincoln; S. L. Wilson, Sacramento; Robt. Chalmers, Coloma.

STANDING COMMITTEES.

On Cultivation of the Grape and Pruning the Vine—I. N. Hoag, of Yolo; Robert Chalmers, of El Dorado; Geo. West, of Stockton; B. D. Wilson, of Los Angeles; J. R. Snyder, of Sonoma; B. N. Bugbey, of Folsom; J. R. Nickeson, of Lincoln; G. N. Swezy, of Marysville; L. J. Rose, of Los Angeles, and Dr. J. Strentzel, of Contra Costa.

On Wine Making and Clarification of Wine—A. Haraszthy, of San Francisco; ——— Craig, of Sonoma; Geo. Gozinger, of San Francisco; Matthew Keller, of Los Angeles; B. N. Bugbey, of Folsom; B. D. Wilson, of Los Angeles; Robert Chalmers, of Coloma; J. R. Nickeson, of Lincoln; Geo. West, of Stockton; J. Strentzel, of Martinez; Jacob Nought, of Sacramento, and A. Eberhardt, of San Francisco.

On Manufacture of Brandy from the Grape—General Nagle, of San José; Geo. Johnston, of Sacramento; L. J. Rose, of Los Angeles; Robert Chalmers, of Coloma; O. W. Craig, of Sonoma; Chas. King, of St. Helena, and B. N. Bugbey, of Folsom.

On Casks, Vessels, Press, and Machinery—Geo. Johnston, of Sacramento; J. R. Nickeson, of Lincoln; Charles Strobel, of Sacramento City; Robert Chalmers, of Coloma, and Samuel Dodd, of Lincoln.

On Statistics—Geo. Johnston, of Sacramento; Geo. W. Applegate, of Placer; I. N. Hoag, of Yolo; L. R. Chamberlain, of Placer, S. L. Wilson, of Sacramento, and Joel Clayton, of Clayton.

On Memorial to Congress—B. D. Wilson, of Los Angeles; H. Larkin, of El Dorado; L. M. Schrack, of Mokelumne Hill; Geo. Johnston, of Sacramento; A. Hewel, of Knight's Ferry; Robert Chalmers, of Coloma; I. N. Hoag, of Yolo; A. Schell, of Knight's Ferry; Samuel Dodd, of Lincoln; Mr. Caldwell, of Sonoma, and S. L. Wilson, of Sacramento.

On the Best Variety of Grapes for General Use—J. R. Nickeson, of Lincoln; Geo. West, of Stockton; J. J. Ott, of Nevada; Joel Clayton, of

Clayton; Samuel Dodd, of Lincoln; D. Chamberlain, of Yuba; Dr. Lockwood, of St. Helena; C. G. Carpenter, of Diamond Springs; I. N. Hoag, of Yolo, and John H. Carroll, of Sacramento.

On Classification of Grapes—J. A. Lockwood, of St. Helena; J. Strentzel, of Martinez; J. R. Nickeson, of Lincoln, and J. DeBarth Schaub, of Los Angeles.

At the last meeting, on the twenty-first of February, among other business, the following reports were read and discussed:

REPORT ON CULTIVATION OF THE GRAPE AND PRUNING OF THE VINE.

Mr. President and members of the Association: Your committee on the cultivation of the grape and pruning the vine, have the honor to submit the following report:

LOCATION AS TO CLIMATE.

The vine does so well in all portions of the State, when on proper soil, that your committee feel called upon to say but little on the subject of climate. From the northern to the southern extremity of the State, and from the seacoast counties almost to the summit of the Sierras, the vine is at home and flourishes well, bearing an abundance of luscious fruit. The rule of success is general and the exceptions are local. The damp and foggy atmosphere of the immediate seacoast is to be avoided, as not congenial to the grape, and any locality where the cold winds direct from the ocean prevail to a considerable extent must be set down as unfavorable to the success of the vineyard. With this single exception your committee can recommend the climate of California as universally favorable to the cultivation of the grape for all the purposes for which that delicious fruit is used, and would only recommend different locations for different varieties and for different uses. For instance: late-ripening grapes and rapid wood-producing vines should be planted on a southern exposure, while those that ripen early and produce but a small growth of wood, do better when less exposed to the direct rays of the sun.

SOIL.

In selecting soil for the vineyard, California presents an abundance of varieties, so that there is no necessity of planting the vine in soil not adapted to its growth and perfection of fruit. Avoid the stiff, impervious clay and the loams, too rich in vegetable matter, as unsuitable to give healthy vines, or fruit of a high degree of delicate flavor and the proper quantities of saccharine matter. The earthy taste so perceptible in some of our California wines, has its origin, to a great extent, if not entirely, in the too great predominance of decayed vegetable matter in the soil on which the vine is grown. No vineyard should be planted on the rich alluvial soil of our river bottoms with the expectation of producing good wine, nor are the small valleys in the foothills as favorable for this purpose as the less fertile soil of the surrounding elevations. A subsoil of broken decomposed lime or sandstone, slate or granite,

with evidences of volcanic debris, is undoubtedly the best. The vast quantities of red lands of the second elevation from our river bottoms, and extending back to the foothills in all portions of the State, are well adapted to the growth of the grape for the table, for raisins, and for wines and brandies, but for the light table wines a more elevated location is deemed preferable.

PREPARATION OF THE SOIL.

Having selected the location, the next step is to prepare the soil to receive the vine. Whether the land has been previously cultivated or not, it should be thoroughly cleaned of all roots, trees, or stumps, and well plowed and subsoiled to a depth of from fourteen to eighteen inches the Spring previous to planting. Before planting let it be well plowed again and harrowed and cultivated until thoroughly pulverized, and then when rolled it is ready for marking off for the rows of vines. This process is done by different cultivators of experience by entirely different modes, and the great question in marking off the land and preparing the proper holes for the vines and planting them in straight rows for convenience in after cultivation is, after all, one of economy—the performance of a mechanical operation rather than one of principle, as affecting the future growth and production of the vine. Especially so since all argue as to the necessity of care and thoroughness in the performance of every part of the work. All agree that the vines should be planted about six to eight feet apart each way. All agree that the holes should be dug from eighteen to twenty inches deep, and should be at least that number of inches in diameter. All agree that they should be filled with well pulverized surface soil, and that the soil taken from the bottom of the hole in digging should not be returned to the hole for the young vines to start in. All agree that but one bud of the vine or cutting planted should be left above the surface, while some maintain that in case cuttings are planted instead of rooted vines it is better to cover the top end of the cutting slightly with soil, so as to protect it from the drying winds and hot rays of the sun while making its first efforts at separate and independent life.

DIFFERENT MODES OF PLANTING.

Of the several members of your committee, Snyder of Sonoma, Strentzel, of Contra Costa, Bugbey, of Sacramento, and Chalmers, of El Dorado, lay off the land by any convenient method—as a small plow—in squares of eight feet each way, and dig the holes at the intersections of these lines to receive the vines or cuttings. Swezy, of Yuba, and Nickeson, of Placer, on the other hand, make trenches eight feet apart across the field one way by running the plow back and forth say three times, turning the furrow out, thus making the team do the greater part of the labor of digging the holes. This being done, they use a long light pole, marked off at intervals of eight feet each, to locate the hills in the other direction, and complete the work of making the hole with the shovel. Having planted the vine and leveled up the land immediately around the same, they, with one horse and small plow, turn the dirt back and fill the trench.

CUTTINGS AND ROOTED VINES.

There seems to be a considerable difference of opinion and practice between the different members of your committee, as to whether it is

the better plan to plant cuttings in the vineyard, where they will not again be disturbed by transplanting, or to plant them in beds, for rooting, to be lifted carefully at one year of age and transplanted permanently in the vineyard.

Messrs. Snyder, Bugbey, and Swezy practice the former course, with some exceptions; while Messrs. Chalmers and Nickeson practice the latter, and urge strong reasons for it. Bugbey takes the precaution to plant two cuttings in each hole, to insure a growing vine, placing the bottoms in opposite sides of the hole, so as not to interfere with the roots of the one while lifting the other the following Spring, in case both grow.

Dr. Strentzel, speaking of this particular branch of the subject, says: "If the growth of a cutting could always be secured, it would be preferred, as the first roots strike out regularly, the root end of the cutting heals over smoothly, and it makes a healthier and thriftier vine. But some soils are naturally too dry; some years the rainfall is scanty, in others the ground cannot be put in condition until late in the season, and under such circumstances one year rooted cuttings, carefully lifted and set, insure a better stand."

On the same subject, Nickeson says: "Plant good rooted vines, by all means. Upon this depends all your future prospects, for if you plant cuttings to remain in the vineyard, the results will be unfavorable, and you will always regret it. Plant cuttings and they will strike out roots at the bottom that will go down to the water, if possible, and never throw out any surface feeders, which is necessary to get heat, light, and air, that will produce good feed for the fruit. The natural tendency of a cutting thus planted and rooted is to make an abundance of wood, but not fruit. What fruit it does produce will be inferior in bunch and berry, and destitute of saccharine matter that is necessary to make good wine. I think the reason why we have so much poor acid wine in California is attributable to planting cuttings instead of rooted vines. Nor is there any economy in planting cuttings. The percentage in loss, and the trouble and time in resetting, and loss of time in securing a bearing vineyard, makes this method of starting a vineyard cost more than to plant good rooted vines at first." This distinction is entitled to more consideration than is generally conceded to it. To insure good well developed grapes of good quality, and a plenty of them, we want to encourage side and surface roots, and planting rooted vines one year old is the best way to make success certain.

STAKING THE VINES.

Every vine or cutting planted should have a stake by its side to which to tie the young cane and insure an upright start, and to prevent the winds or teams from bending it over or breaking it off. This stake should be as high out of the ground as it is intended to train the vine, and no more, and should remain in its place until the body of the vine has attained sufficient age and size, or strength, to maintain an upright position unaided, even when loaded with fruit. Some cultivators place these stakes before planting, as a guide in digging the holes, while others set them after the vines are set; but this is a matter of convenience in practice rather than of principle. But be sure not to neglect setting them at all, as very much depends on securing an upright position of all the vines in the vineyard.

SELECTING CUTTINGS.

Whether cuttings are to be set direct in the field or be rooted in the bed, much care and judgment is required in selecting and preparing them for setting. The butt cuttings, or the ends of the cane next the old wood, are always preferable, as a less change is required for such cuttings to become rooted vines. Those having short joints are preferable to those with long joints. Never use suckers for cuttings. Cuttings for planting direct in the yard should be from eighteen to twenty inches long, while a foot is long enough for rooting in the bed. In either case the butt of the cutting should be cut off close below a joint so as to have no dead wood below where the lower roots form and put out. The top of the cutting should be cut off at least half an inch above the upper joint so as to insure the growth of the butt at this joint. Both these places should be cut with care to prevent jamming or splitting the end of the cane—and very smoothly, so the wound will heal quickly. If much time is to intervene between the time the cuttings are prepared and the time of setting them, they should be kept in a very damp place, and some recommend placing the butts of the bundles in living water or burying them in the ground and covering them entirely. The latter practice would seem the most natural, and will facilitate the healing of the cut at the butt end and the change necessary to form roots.

CULTIVATING.

There is but one opinion as to the necessity and value of frequent and thorough cultivation of the vineyard. Let the plow and horse-hoe be used without stint, keeping the soil thoroughly pulverized and clear of weeds. Each vine should also be hoed well and frequently, so as to keep the weeds all down and the soil immediately about it mellow and in a lively, moist condition. This should be followed up from year to year, as much of the future value of the vineyard depends on thorough cultivation and rapid healthy growth while young.

IRRIGATION.

Irrigation should never be resorted to for the young or old vineyard unless absolutely necessary to insure life and healthy growth, and your committee are of the opinion that good cultivation will secure these ends in all but very few localities in the State. The young vineyard should be treated as it is intended to treat it when older, that its habits may conform to the necessities of its future life. One of the greatest points favorable to the climate of California for vine growing and wine and brandy manufacturing from the grape, is the absence of rain during the Summer season, thus securing health to the vine and the proper qualities to the grape. Then let us not by irrigation spoil the effects of this so important a condition of nature.

PRUNING.

The first year after planting the cutting will need no pruning, nor will the rooted vine, except to lop off any extra suckers or shoots that may start out below the one left at the top to grow. When this has attained a growth of from fifteen to eighteen inches, it should be cut

back to about one foot, being careful to keep it in an upright position by tying to the stake, as before intimated. This cutting back will give the body of the vine stock and size, and will encourage the development of the upper buds, thus forming spurs about one foot from the ground. The first Winter, or the first pruning proper, should be performed in the early part of Winter, when the sap has entirely left the cane and descended into the roots. The two upper spurs should then be cut back to two buds each, not counting the dormant bud, and all spurs or suckers below these should be cut smoothly off, and the old wood projecting above the shoulder or point where the new cane joins the old wood, should be pared smoothly off, and the ground be thoroughly cultivated as on the previous year. At the second pruning three or four spurs may be left on the vine, according to its strength, and so located as to preserve an equilibrium in the head. These spurs should be cut back to three buds each. No Summer pruning should be practiced except to keep off all undergrowth or suckers, and, perhaps, shortening-in some of the spurs to keep an equilibrium.

At the third pruning, four or five spurs may be left on the vine, cut back to three buds each. The two outer buds will produce some fruit, while the lower one will probably produce wood and no fruit. Your committee believe, as a general thing, better results may be realized by leaving less spurs than is generally the practice, and allowing these a greater length. Some vine growers of experience practice leaving one more bud on vines of all white varieties than on those of colored varieties, the vines being naturally more vigorous and capable of sustaining a greater crop of fruit. The same practice is followed in pruning all varieties bearing a small bunch and berry. The Catawba, Isabella, and all vines of similar habits, should also be allowed a larger number of fruit-bearing buds on each spur, and a less number of spurs than most other varieties. This practice increases the quantity and improves the quality of the fruit.

PRUNING AND CULTIVATING ON LOW, RICH LANDS.

The above observations are applicable to the care of vines on all land proper for the cultivation of the vine for wine purposes. On the low, rich river bottoms, where a large amount of wood-growth is the tendency, and where the vines are apt to mildew, quite a different treatment is required. In the first place, on such lands the pruning should not be done until in the Spring, when the buds have started well, and on very rich and damp land this may be delayed with advantage even until the blossoms are making their appearance. Then a smaller number of spurs and more buds on each spur should be the rule. The vines will bleed profusely when pruned, and this will do them good, that is, it will check the naturally too rapid and rank growth of wood, and act favorably in the development of fruit. It will almost universally prevent the vines from mildewing. The cultivation, too, should be different on such lands. Instead of plowing deep and pulverizing the soil so as to retain the moisture in the soil, as on the high and dry lands, the cultivation should be with a view to produce the exact opposite condition. The ground should not be plowed until the weeds have obtained a good start in the Spring so as to exhaust as much moisture from the soil as possible, and then it should be plowed very shallow—just deep enough to cut the roots of the weeds below the surface. The whole cultivation of the season should be conducted with a view

to keep the weeds from getting too high and going to seed, instead of for the purpose of keeping the soil mellow and damp. Your committee submit the above few suggestions, hoping they may be of some benefit to some of the vine growers, and at some future time may take occasion to give the subjects touched upon a more extended consideration. We would recommend that the association take steps to secure as much as possible the individual experiences of growers in different localities and on different soils, for publication for the general good.

I. N. HOAG.

OBSERVATIONS ON THE PLANTING AND PRUNING OF THE VINE.

At the threshold of successful viniculture our attention is called to the selection of the most advantageous location for a vineyard. With the long, dry, warm season of California, an exposure due south is not indispensable; a variation to the east or west is far preferable, and even a northern gentle slope may be admissible. Success here depends more on the quality of the soil as being deep, rich, friable, or easily worked; of sufficient descent for natural drainage, and well sheltered from the prevailing heavy winds. A subsoil of broken, decomposed slate, lime, or sandstone is always preferable to stiff, impervious clay. Our virgin soil, formed from the attributes of surrounding mountains, contains sufficient pabulum for plant food; only the excess of any one, either clay, lime, or sandstone, has its particular character of being more or less retentive, or favoring the absorption of moisture. The natural growth on any given spot is the best criterion of its quality.

The selection of certain varieties of grapes to be planted must be influenced by the uses contemplated. Some are most suitable for table use in the fresh state, or dried for raisins; others for converting into brandy; others for wine; but for whatever intended, it cannot be lost sight of that only the best varieties of either class should be chosen. Each variety possesses a distinct character, which is certainly modified by the soil and climatic peculiarities of a district; still it retains its distinct type of superiority. It is only of late that, by the enterprise, perseverance, and good judgment of the pioneers of viniculture, among whom the lamented Col. Aug. Haraszthy was preëminent, we are enabled to make our selections from the whole range of cultivated vines in all lands, and to adopt for our own the experience gained during centuries of European viniculture, thus placing California on an equal footing with the best and oldest.

The preparation of the soil claims our careful attention. If not previously cultivated, it ought to remain in the Summer fallow one season, and in the Spring be cross-plowed deeply and subsoiled; if naturally mellow and sandy, a partial subsoiling in the future rows of vines will answer, but it is always upon the thoroughness of the work that a thrifty growth of the vine depends. The rows should be perfectly straight, with broad avenues conveniently located for access. If the piece of ground is of irregular shape, a base line is to be surveyed on the longest diameter, and another at right angles to it on one corner, as a basis for extending parallel lines with perfect accuracy. By stretching a line and measuring along it with a suitable pole, the places for the holes can

be marked with small sticks. The holes should be dug at least two and a half to three feet each way, and be filled in with the richest mellow top-soil, and whenever practicable, it is well to use a lasting compost of broken bones, gypsum, or lime, spread in the bottom of the holes. Distance between the vines: for strong growing varieties, seven by eight feet, or eight by eight, is necessary; though for vines of slender growth five by six, or six by six, will answer. It is my experience that after ten or twelve years the vines require all, even the largest space. If the soil can be enriched from year to year by liberal manuring, the vines may be planted closer, thus gaining somewhat in the quantity of fruit, but with greater inconvenience in after culture, and also probable deterioration in quality. It is claimed by many that in poor soils the vines should be planted closer; but it certainly seems evident that in such soil the vine requires a larger space to secure food, just as a bullock would on a scanty pasture, provided it is not designed to exhaust the soil in the shortest time.

Some difference of opinion prevails regarding the choice of cuttings or of rooted vines for stocking a vineyard. If the growth of a cutting could be always secured, it should be preferred, as the first roots strike out regularly, the root end of the cutting heals over smoothly, and it makes a healthier and thriftier vine; but some soils are naturally too dry; some years the rainfall is scanty; in others the ground cannot be put in condition until late in the season, and under such circumstances one-year rooted cuttings, carefully lifted and set, insure a better stand. Older vines are objectionable, as they get more or less injured in transplanting. Cuttings fifteen to eighteen inches long are desirable. In dry, sandy soils, long cuttings do best; in moist and heavy, short ones. Having selected a location, prepare the soil, determine the most profitable use to be made of the fruit, and accordingly the variety of grapes, secure cuttings from healthy, thrifty, growing vines, with the butt ends smoothly cut close to a bud, and having kept them in moist earth from the time they were pruned off, we begin planting as early as the season and circumstances may permit. If the planting must be delayed, or if the cuttings have not been preserved in a perfectly moist state, they should, for several days previous to planting, be placed in bundles in some running water, but with only the lower half immersed. Success in rooting cuttings depends upon ample moisture and the compact pressing of the soil around the cut end; a pint of water to a cutting will often determine its growth. After the holes are half filled in as previously stated, the operation of planting proceeds rapidly; if rooted vines are used the filling-in of the hole is modified in a manner securing the proper spread of the roots. A line is then stretched along the row, the spaces measured with a pole, say twelve or fourteen feet in length, a dibble hole made in the exact spot, the cutting inserted in it perpendicularly, the earth pressed closely around it and watered, the hole filled up even with the ground, covering slightly the topmost bud; a small stake is then placed to mark the spot, and our vineyard is started. The first season but one shoot is allowed to grow, and that tied to a stake and the end nipped off to eighteen or twenty inches, and thus a stocky growth is at once maintained. Second year the vine is cut to two eyes, to secure against accident, the dry top is pared off neatly, and after the ground is plowed and hoed the weakest shoot and all suckers are taken off and the other is tied up, and when necessary, pinched-in to maintain a hight of about two feet. Excepting the Isabella and kindred varieties, all grapevines do best here when trimmed low, even trailing

on the ground; still, to avoid lumps of dirt being taken with the bunches and also early rains causing them to rot, it is best to have a stem ten to twelve inches high, which is accomplished at the third year's pruning, by cutting the cane as high as desired and rubbing off the lower buds, permitting only the uppermost two shoots to grow. These are to be staked up, all suckers removed, and the canes shortened as formerly. Fourth year the two canes are pruned to two buds each, from which four canes are grown, and again these are pinched-in, keeping them to about three feet high; the ends of the laterals are also shortened one leaf. The vine now begins to develop a symmetrical shape, with an upright, self-supporting stem. The fourth year also, according to the good quality of the soil and the proper attention given, we may expect a very fair crop of grapes. The fifth year the four canes are cut to the first bud above the collar on the upper side of the arm or branch; if there happens to be a bud underneath it should be removed. Thus we obtain mostly two canes from each arm, forming a compact, regular head.

At each Winter pruning the wood should be cut one eighth of an inch above the bud, with a sharp knife or good working shears, to avoid fracturing or mashing up the end; and if taken so close to a bud the new growth will soon nearly cover the cut, or if not, the small stump is easily pared off, and will heal over the next season, thus promoting the longevity of the vine, as nothing is more destructive than notches and dry stumps, which check the growth and induce decay.

There seems to be much diversity of opinion about Summer pruning. Certainly, an indiscriminate slashing of the growing canes is not to be permitted, and the general rules are the same as in the pruning of other fruit trees. The work begins as soon as the young canes are twelve or fourteen inches high, or about the fourth leaf above the blossom, by pinching off the terminal leaf. This not only throws the sap to the forming blossom racemes, but promotes the solidifying of the new wood, rendering it less easily broken by heavy winds. The shortening-in is repeated during the season, according to the exuberance of growth, always removing only the ends of the shoots, though some of the most rampant laterals may be taken off half their length.

Judicious Summer pruning prevents the formation of unnecessary wood, economizing thus all the sap to the conversion into fruit and its support; the vine remains in compact shape, and still with an abundance of leaves to perform their function, and the fruit is well shaded from a too scorching sun.

A most reprehensible practice, showing alike the lack of knowledge and of judgment, is that of removing from the vineyard all the prunings of the vines and letting them go to waste, thus exhausting the soil rapidly of those essential elements which sustain a healthy vegetable life. It is the same skinning, vandalic process followed in other agricultural operations in California. If we are not able to enrich our vinelands by the constant addition of artificial manures, often costly and inaccessible, at least all the prunings should be chopped up and plowed under the soil, eventually to return again to the light in an increasing luxuriance of leaf and luscious fruit.

J. STRENTZEL, Contra Costa.

PLANTING AND PRUNING THE VINE.

To the Chairman of Committee on the Cultivation and Pruning of the Grape:

I beg leave to report, first, on location. I prefer a granite formation, because it is better adapted to the growth of the grape, producing more saccharine matter and is more easily cultivated. Next, I would prefer slate, with a high and dry location and perfect drainage, so that the roots will not enter into the perpetual water, and as level as I could get it, with as few outcropping rocks as possible. Next, gently sloping hillsides. Remove the timber, stumps, and roots; plow the land deep and well, say from fifteen to eighteen inches deep; harrow, roll, and pulverize well; then lay off the rows eight feet apart both ways, and plant good rooted vines by all means. Upon this depends all your future prospects; for if you plant cuttings to remain in vineyard form the results will be unfavorable, and you will always regret it, for several reasons. Plant cuttings, and they will strike roots at the bottom that will go down to the water if possible, and never throw out any surface feeders, which are necessary to get heat, light, and air, that will produce good fruit. The effect of cuttings is to make wood in abundance, and not fruit; and what fruit they do produce is inferior in bunch and berry and destitute of saccharine matter, which is so essential to make good wine. I think that is the reason why we have so much poor acid wine in California.

We do not economize when we set out cuttings. The percentage in loss, and the trouble, waste of time and labor, make the cost more than to plant good roots at the start. I can tell by the kind and quality of the wood where I have set out a cutting. If good roots are planted they set two kinds of roots, a few deep feeders to get moisture in a dry time, but the most of them are surface feeders, essential to the development of a perfect grape. This subject is entitled to more consideration than is generally conceded to it. Upon this proposition depends our future success. If I were going to plant cuttings I would select a hard bed rock that the roots could not penetrate. I noticed in making an excavation eighteen feet deep, to build a wine house, in the rotten granite, solid though not hard, that the roots from cuttings planted eight years before had penetrated to that depth half an inch in diameter, when rooted vines had not gone to the solid rock. I make mention of this fact, for it is a lesson in nature that we should notice.

After the land is ready, get a lot of stakes eight feet long for sight and measuring poles. Set these up at convenient distances to run a trench by. As the plow passes up the first turn, set the stakes for the next row. Turn three furrows in a trench, making it eighteen inches deep. Every tenth row leave ten feet for a wagon road. In this way the horses do the most of the work. Then prepare a long pole of light material, say one hundred feet long; mark it correctly every eight feet, to dig holes by. Set up stakes across the end to start from. It is necessary to start from one end every time, so as to have the rows straight both ways. Lay this pole by the side of the trench. Be sure and see that the end of the measure is straight with the end line; if so, there will be no trouble. Set four or five men to digging holes. The holes should be dug in front of the mark on the pole, banking up dirt at the mark on it, so that the setters will have this guide to set by. When

through this row, return to the first end and start as before. One man will take roots in his arms and hold them in place, while another will with a shovel throw dirt around them to hold them. When a row is set take a one-horse plow and fill up the trench. In this way the holes need not be dug, except enough to get the roots fairly in and the vines straight. All of the old wood should be put in the ground, leaving out but one eye.

In this way a vineyard can be planted quickly and cheaply, and much better than if the holes were dug by hand. If strong roots are planted they will make sufficient wood the first season to form a good, straight shoot for the vine. When the young shoot gets eighteen inches high cut it off at twelve inches high. Place a stake by it and tie the top of the vine to the stake. The two top eyes will start and make spurs for a head. Keep all undergrowth below cut off so as to make them strong and stocky. At the next pruning time cut these two limbs off to two eyes. At the second pruning, when there will be plenty of wood to form a head, leave three or four spurs, cutting back to three eyes.

At the third pruning cut back to the three eyes. This season they will bear considerable fruit. Pains should be taken in forming a good, well balanced head, the wood equally distributed around the stake so as to give it a perfect equilibrium. In leaving three eyes on the spurs it does not induce so much non-bearing wood, as the first eye is a wood bud; the next two produce fruit. These second and third buds absorb the sap of the vine so as not to force the first. In this way there is less wood and more fruit, and foliage to protect the fruit from the sun and admit plenty of heat, light, and air for the development of the fruit. If pruned back to one bud the dormant buds will be forced, which will make wood and very weak. At the fourth pruning select six or eight of the strongest and best limbs of your head, always cutting back to the nearest to the old wood. In this way the head of the vine does not increase in hight. I think a vine trimmed one foot high is the best hight for many reasons: first, it is more easily cultivated; in plowing, the singletrees pass over the head and are less liable to break the shoots; the fruit is not so easily sunburnt; gets the benefit of the warmth of the earth at night. The fruit nearest to the end on the ground is less liable to mildew or any other disease. In fact, I have never seen a bunch of grapes lying on the ground mildewed, and generally they are larger and more perfect in bunch and berry. The ground should be well cultivated every year. I use a one-horse shovel plow; for breaking up ground, a small harrow made for that purpose. Plow both ways and harrow so as to pulverize; then level the ground, using the horse hoe to keep the weeds down and ground mellow through the Summer. The stakes used in supporting vines should be eighteen inches long, sharp at one end, driven in six inches by the side of the vine. They can be made of oak, redwood, or sugar pine cheaply. They can be removed the third year, as the vine will be able to stand alone. They can be used in young vineyards. Using stakes on a young vine is a great advantage in many ways. They keep the vines straight till they are able to hold up the fruit; they are more easily worked and bear more fruit.

J. R. NICKESON, Placer.

THE MANUFACTURE OF BRANDY.

Mr. President and members of the Association:

Your committee, to whom was referred the manufacture of brandy, have the honor to submit the following report:

For the year ending June thirtieth, eighteen hundred and seventy-one, there was manufactured in this State three million eight hundred thousand gallons of wine; the pomace and lees from which, without working any wine, should have yielded three hundred thousand gallons of brandy; but owing to oppressive revenue laws, imperfect distilling apparatus, and total waste of material, only one hundred and fifty-seven thousand gallons were made. The crop of eighteen hundred and seventy-one amounts to about six million gallons of wine, the pomace and lees from which should yield four hundred thousand gallons of brandy, while the amount actually made will not exceed two hundred thousand gallons.

It is impossible for small vintagers to work their pomace to advantage in stills heated by the direct action of fire; they cannot make a good brandy. But with steam and a proper rectifying column a good brandy, or perfectly clean spirit, can be made. The smaller the still the greater the waste, the greater the cost of manufacture, and, as a rule, the poorer the quality.

We would therefore suggest the formation of factories similarly conducted to the cheese factories in the East, where all the vinegrowers would be stockholders to the amount of their stock of grapes. Their wine and brandy would be manufactured by the most economical and effective machinery, and their product would go on the market of improved quality, and at reduced cost, enhancing the profit.

The most of the French brandy is grain, beet, or potato, spirit flavored. California may not furnish a brandy with the peculiar flavor of French; but it can furnish a perfectly pure grape spirit, with the particular flavor and bouquet of any of the high flavored grapes grown here.

In the manufacture of brandy from grapes, without making wine, it is necessary to add to each ton of grapes from one hundred to one hundred and fifty gallons of warm water, the temperature of which should vary with the size of the fermenting tubs, the temperature of the weather, and the grapes when crushed. The temperature of the tub, when full, should be from sixty-eight to seventy-five degrees Fahrenheit. The water should be first put in the tub and the crushed grapes added. After a few days, if the wine in the bottom of the tub is not attenuating as rapidly as it is at the top (and it seldom is), it should be drawn off and pumped on top, as the fermentation goes on more rapidly on top than on the bottom, and unless this is done there will be unfermented sugar in the bottom of the tub, while there is none on top.

Care should be taken to keep the skins, by means of a cover, under the wine. If allowed to float on top, the acetic and putrescent fermentation will soon set in, to the loss of quantity, and ruin of quality, of brandy.

The still of the Johnston Brandy and Wine Manufacturing Company, Sacramento, is probably the most convenient and economical now in use. In charging the still with pomace, it is conveyed by means of a car on a track, and emptied into the still through a manhole with movable hopper; when charged, the hopper is moved, main plate screwed down, and steam admitted through a coil of perforated pipe. The vapors from

the still then pass into a nine-chamber column seventeen feet high, in eight chambers of which there is a coil of pipe containing water. The water enters the upper chamber and passes through each successively to the bottom, constantly increasing in temperature, while the vapors, as they ascend through the chambers, are gradually decreased in temperature. So that by regulating the flow of water through the pipes the temperature of the column can be maintained at a point through which spirit of the desired proof only can pass, this being ascertained by a thermometer on top of the column, thereby running off the entire charge at from twenty to eighty-seven per cent above proof, at the option of the operator. The only portion requiring redistillation being a small percentage containing light ethereal oil, which, being lighter than alcohol, comes over on the first part of the distillation, in combination with some spirit, and to separate which they (the ether and spirit) are mixed with four or five times their bulk of water and redistilled. The bottom of the still is funnel shaped, with a discharge hole eight inches in diameter, covered by a plate held to its place by a lever and screw, which opened, discharges its contents in one minute.

As the brandy trade is not yet extensive enough to induce our distillers to use grain, beet, or potato spirit to increase the quantity, as is done in France, we can divest the brandy of most of its fusel oil and acetic ether, both of which are the most poisonous ingredients of distilled spirits, thereby producing a brandy much less injurious to the human system, which will develop bouquet in abundance in the course of a year. The quantity of brandy produced to the two thousand pounds of grapes at the Johnston Brandy and Wine Manufacturing Company was a little over forty-three gallons proof. From lots, one of seventeen tons and one of ten tons, worked separately, one yielded forty-nine and two tenths, and the other forty-nine and four tenths gallons, at proof, per ton; the average on the whole working being caused by a large amount of inferior grapes worked early in the season. This Company also worked thirty tons of grape skins, after fermentation, part of which had been pressed in a hydraulic and part in screw presses, from which they obtained eight hundred and sixty-nine gallons of proof brandy, or nearly twenty-nine gallons per ton. The yield would have been larger had the skins not been exposed for several days after pressing, before they were received into the distillery.

GEORGE JOHNSTON,
ROBERT CHALMERS,
Of Sacramento.

MANUFACTURE OF BRANDY.

California Vinegrowers' and Wine and Brandy Manufacturers' Association, Sacramento:

GENTLEMEN: I received a communication from your Secretary, dated the sixth instant, inviting me to attend a meeting of your Association, to be held in Sacramento on the twenty-first of February, and requesting me to accept the position of Chairman of the Committee on the Manufacture of Brandy from the Grape.

My engagements are of such a character that it would be impossible for me to accept the position of Chairman of the Committee named, and it will be equally impossible for me to be present with you at Sacramento on the twenty-first instant.

I need hardly assure you that I am with you most heartily in all that may be done to encourage the growth of the grape, to ascertain and encourage the selection of the best varieties of the same, and to facilitate the diffusion of all kinds of knowledge that may improve the quality of the wine and brandy produced. With this purpose I have hastily thrown together the following suggestions, knowing that you will credit me with good purpose, if you shall find nothing new in all that I may communicate.

One of the greatest interests in France, which is fostered by that Government in every possible manner, comes from the culture of the grape, and the manufacture of wine and brandy from it. The sale from this industry amounts to one hundred and eighty million dollars per year; a sum larger than the yield of the cotton crop of the entire United States at the exorbitant prices of the present time. Foreigners familiar with the subject, who have introduced the vine from Europe, invariably assure me that the vine and grape improve by transplanting into California; that the soil and climate of this State cannot be surpassed for that purpose; and that the fruit being superior, we only require time to know how to use it, when we must produce the finest wines and brandy in the world. The great difficulty that we encounter will be to get rid of old mistakes and old prejudices, and to convince others, after we have convinced ourselves, that the Mission grape, with the exception of some few favored locations, is inferior to many other of the European varieties; and that in planting, hereafter, it is of the utmost importance that the proper selections of the vine shall be made. It is unnecessary to refer to the varieties grown for wine purposes east of the Sierras, it being determined that they are inferior to the foreign grape. A great difficulty with the foreigner familiar with the subject comes from the great change in the character of the vine and grape in transplanting here, rendering all of his former experience of no avail. Again, he is required to await say four years to produce the grape; then he must wait from two to ten years to mature the wine; thus requiring from seven to twelve years to ascertain the result.

I have attempted to arrive at a result in less time, and test the peculiarities of the grape by converting the wine made of it into brandy. I find, by a careful distillation, that the especial bouquet and flavor of the grape may be fully developed in the brandy—the aroma appearing soon after distillation, and the flavor rapidly after two years. By these means I have found a marked difference between the brandy of the Mission grape and that made of the La Folle (Cognac grape), the Reisling (Rhine grape), the Rosa de Peru, the Pinaud or Burgundy grapes, and the Catawba; and of these the brandy is inferior to all except the Catawba, which, although in aroma is rather agreeable, the flavor is harsh, and improves very little with age. In Cognac, I was advised not to depend upon a complicated form of distillery. Henesy assured me that he preferred the primitive vessel and worm to any other form of distillery; that rectification was entirely unnecessary, and that charcoal was never used. He constantly impressed me with the importance of making white, not red wine, and that the character of the brandy would depend almost entirely upon the quality of the wine distilled.

I visited many brandy distilleries at the vineyards near Cognac, and found them, with few exceptions, of the most simple form—the fire being applied directly under the copper boiler that held the wine. Upper and Lower Charante is the most sterile of all the grape country in France; and the only grape growing there is the La Folle Blanche,

which makes a wine so detestably bad that it can be utilized only by being converted into brandy. This wine contains but six degrees of alcohol, producing low wines not exceeding thirty degrees at the first run. These low wines require a second distillation, both of which being made carefully, produces a brandy which requires no further rectification.

There seems to be a very prevailing opinion that brandy should be free of all the volatile oils, and especially of the fusel oil; and some persons engaged in the manufacture of brandy, or in the construction of stills, advise you that they can manufacture brandy of eighty-five to ninety degrees entirely free of fusel oil. I need hardly tell your Association that brandy without fusel oil is not brandy at all, and that when distilled at eighty-five to ninety degrees approaches so nearly to alcohol that, like it, it has neither odor nor flavor, and becomes neutral in both. The proper strength to be given to brandy when running from the distillery is, after the selection of the grape, the most important subject for investigation. It should vary with the material used, and can only be determined after close observation, by an experienced person of delicate sense of smell and taste. This point being once determined, distillation above it will diminish the bouquet and flavor, and distillation below that point will introduce an excess of the volatile oils, and the delicate character of the brandy will be lost, or rather disappear through the injurious effects produced by the excess of fusel and other oils. The requirements of the revenue laws, that a distiller shall run his distillery to a certain capacity, is a direct violation of the distiller's interest. My experience has been that the qualities of the brandy will very much depend upon the slowness of its manufacture. Formerly I made a gallon of brandy in two minutes; now I make a gallon in eight minutes—just fast enough to come within the capacity required by the Government.

Another subject of great importance, and considered in France as the one of the greatest difficulty, is the selection of the oak to be used for the brandy package. They assert that American oak will injure any brandy put into it. They employ the oak brought from Austria, to the exclusion of every other, and expect that the oak shall be not only not injurious to the brandy, but that it shall impart to it a peculiar taste that they consider highly advantageous. In the absence of all foreign oak I have been compelled to use the American, or Canadian oak, first steaming it thoroughly. I find that after steaming it for one hundred hours, with steam at twenty pounds pressure, the water from the condensed steam escapes of an inky color, disagreeably and excessively acid. The packages that I have adopted are oval in form, of about eight hundred gallons, supported upon four by eight timber, resting upon brick columns of fourteen inches, with solid foundations; the advantages being that the chime is all exposed, and that any leak can be readily detected and repaired, which cannot be done in a cylindrical or conical tank. My brandy house is constructed of brick, with brick partitions to divide the risk by fire, and is of the same level with the ground. The roof is made of metal, with openings covered with glass to admit the sunlight and increase the temperature. In Europe a wine must be excessively bad not to find a ready market, and those only are distilled into brandy that cannot be sold. In California our vintners, many of them, are men of small means, with heavy mortgages to carry at high rates of interest, and cannot wait for the ripening of their wines, or for a market after they mature.

Another heavy item is in the cost of the package, which, at twelve to

fifteen cents per gallon, renders the necessity of converting wine into brandy the more urgent. Again, we have not the intermediate, the wine merchant, with large capital at a reasonable rate of interest, ready to purchase the wines of the producer, and to hold them until matured, and to place them properly upon the market.

Of late years Americans have become familiar with the habits and customs of European people, and have learned that the most temperate people of the world are those living amidst the vine and grape, and who are accustomed to the use of wine. May we not appeal to those engaged in the temperance cause, and ask them to assist in the repeal of all laws that discourage the growth of the grape?

While the foreign grape matures in October, the Mission grape does not ripen before November or December, when the days are short, the sun far to the south, and the nights cold. To create and quicken the fermentation the roof over the wine tanks and the south side of the wine house should be made of glass; thus the additional warmth will so increase the fermentation of the wine by day as to carry it through the night without interruption.

The manner of pruning has much to do with the ripening of the grape. Upon the sidehills, with proper exposure and warm soil, where alone the vine should be planted, the grapes should grow near the ground; but in rich, cold, valley land, affected yearly by the late Spring frost, the vine may be raised to five feet with great advantage. By this change in pruning my vintage was increased from one hundred thousand pounds of grapes to four hundred thousand pounds; and upon portions of my vineyard, that had never yielded at all, I gathered over fourteen tons of grapes. In France the average yield does not exceed two hundred and fifty gallons of wine to the acre; in California it exceeds three times that amount, and as high as one thousand five hundred gallons of wine have been made from a single acre. Here, two years out of the five, the farmer fails to have a crop. The vine yields most of a dry season. Why, then, should not every farmer plant ten per cent of his farm in grapes, selecting the gravelly and most unproductive wheat land, and thus be prepared for every emergency? In France the vineyards are small, and do not average four acres. In the Cognac country every vintner is a distiller, and with his primitive still he does not make more than one or two pipes of brandy.

Henesy sells his brandy after two years, during which time he employs no extraordinary means for ageing it, merely drawing it from time to time from one package to another, and using felt covered with paper for the purpose of filtering it. Although very important, this could not be done under our revenue laws, the removal of the brandy from its original package being prohibited. The laws of Congress were made to govern the distillation of spirits from grain, and cannot be made to apply to the distillation of brandy. This is admitted by the Commissioner and others at Washington; but the whisky ring has proved so formidable that every effort to pass laws especially applicable to the distillation of brandy from the grape has been defeated. Sargent has always done everything possible, but without success. He has now additional strength in Houghton, and another effort should be made with greater promise of success, the importance of sustaining this great interest being much more appreciated since the presence of many members of Congress on the Pacific Coast.

There is no greater interest remaining undeveloped in the United States than that pertaining to the grape. In California we appreciate its importance. We acknowledge that it staggers under the difficulties

and uncertainties that surround it; and we ask that it shall not be overburdened with taxation; and that if we may receive no assistance, that intelligible laws may govern us, applicable to our necessities, and not filled with the most annoying provisions. We cannot be successful in this great national and State interest until all restrictions are removed from the grape and its products; and I would recommend that, if the Government will not assist us, that the Legislature of the State pay the tax for us.

Americans, as Frenchmen, should learn to distinguish between brandy and "marc brandy;" the former made of the juice of the grape, and the latter from the marc or pomace, or refuse of the grape, after the juice has been pressed from it. In France, "marc brandy" is designated and sold as such, at vastly inferior figures from that of Cognac brandy.

Some idea may be formed of the extent of a brandy establishment in Cognac, when you know that that of Henesy covers five acres of ground; that he has depots and agents over Upper and Lower Charante, an extent of fifty miles square, and that he is prepared to dispatch twelve hundred pipes, and fourteen hundred cases of brandy in a day. And some idea may be formed of the adulteration in the United States when you are informed that the shipment to New York from the above establishment has fallen from thirty thousand gallons per year to three thousand. The adulteration has gone to that extent that gentlemen prefer to drink whisky, knowing it is impossible to procure pure brandy; and that so certain are all physicians of this adulteration, that brandy is no longer prescribed. I have sent samples of brandy made of the Mission, La Folle, Reisling, Charboneau, Trousseau, Rosa de Peru, and Catawba wines, and would request your opinion regarding the order of merit due to each.

HENRY M. NAGLEE,
San José.

WINE MAKING AND FINING.

Having the honor of being appointed as one to make a report on wine making and fining, I will enter into this large and inexhaustible field, but only with fear, knowing full well that it is impossible to give in such a short space anything like a clear and comprehensible idea, particularly to beginners. Nevertheless, I will give my experience, the way I see it, and hope it may be of some advantage to our fellow wine growers.

Ripe, fine-flavored kinds of grapes will make fine-tasting wines, if properly managed, while such cannot be said of other kinds, or such that have not grown on proper ground. Low ground, particularly in California, with few exceptions, is not suitable for wine purposes; the country being of granite formation, which forms salts, collecting by rains in the valleys, together with an excess of vegetable matter, which makes it not only detrimental in wine making, but imparts a bad taste also. Mission or California grapes are rich in sugar when fully ripe, produce a great deal of alcohol, but have little flavor or bouquet. But this not being my object, I will return to my task. I will only make two classes—light and heavy wines—and leave out all different shades and colors. Light wines can be made in any part of the State where grapes will ripen perfectly. There are kinds of grapes which will never obtain that high percentage of sugar to be detrimental for making light

wines, even if apparently over ripe. In others the same end may be reached, when they are harvested as soon as they are ripe enough, and not left on the vines for evaporation and concentration. Early ripening is of great advantage. Wines will ferment more thoroughly and without artificial heat. Light wines require more care than heavy ones, particularly in a warm climate like ours. The casks are to be kept full all the time, and the sooner the wine is cleared from its lees the better, before warm weather sets in. Sulphur should never be used when wines are not fully fermented, for it retards the fermentation. Quick pressing of black grapes, particularly in warm weather, is of great importance, if the object is white wine. The color of the grape will be extracted by slow process, and will make it neither red nor white wine, which is objected to in the market. A good way is to press or crush grapes only a day after gathering, because they will cool down over night, and work may go on in this way until finished. The later running juices from the press, or when it shows coloring, should be kept separate, and may be used for red wine, which has to ferment on the berries to extract the deep red color. The most proper proportion for dry wines, independent of flavor, is from four and not much over five parts of free acid in a thousand, alcohol from twelve to fourteen per cent; and such wines are used in large quantities, they being a healthy beverage. But this requires the necessary instruments and practice to ascertain the exact state of ripeness of the grapes for that purpose; and it is the only way, as I think, to be positive and successful. If such proportions exist in the juice, together with a fine character of grapes, clean casks, and a proper temperature to ferment, there is nothing in the way of making a light, dry, and healthy wine. Dry and thoroughly fermented should all such wines be before they are offered to the market, otherwise they will have to be sold at a discount or to be rejected altogether. Sweet, heavy, or liquor wines are much easier managed, and generally take care of themselves after being made, being only the concentrated juice, sweeter and stronger. Here fine kinds of grapes make fine tasting wines, like the other. It is the sweetness, or the body, which prevents it from spoiling—like preserving fruits in sugar or alcohol. Different kinds and shapes, or artificial flavoring, is only a matter of taste. A thorough fermentation for dry or light wines, or nearly so, is the best fining, and any other is not often necessary. For fining red wines, gelatine is preferable, because it consumes more tannic acid. White of eggs does well; the yellow does no harm, but is useless. The quantity to be used depends upon the state of the wine. Light and repeated fining give a better result generally. White wines may be fined with eggs or isinglass, the latter to be dissolved in a little cold or hot water; the first is preferable. Well mixing and drawing off, in say from six to ten days, is very important. But I would not recommend fining wines to any intending to sell them to large establishments. Wines may be two or three years old and not be fully fermented, having had no chance or otherwise being detained. Fining takes out the ferment and only retards the ripening thereof. In conclusion, I think it will perhaps be better for our wine growers to try for themselves, and they will find a great many interesting problems to solve, which they perhaps think so lightly of at present.

J. KNAUTH,
Sacramento.

WINE AND BRANDY STATISTICS.

Mr. President and members of the Association:

Your Committee on Statistics beg leave to submit the following report: The making of a statistical report upon the grape growing interest of the State, and the products of the vine, is attended with much difficulty, and the figures given in most instances may be considered as only approximates, arrived at, however, from the best and most authentic data at hand. The cultivation of the grapevine and the manufacture of wine and brandy in this State is an industry that we may truly say is in its infancy, less than a one hundredth part of the cultivated land of California being in vines.

We find that in eighteen hundred and seventy-one there were about thirty million vines of all ages in the State distributed throughout forty-four counties. This is an increase of ten million since eighteen hundred and sixty-seven, or about two million five hundred thousand per annum for the last four years.

The entire area in grapes is about forty thousand acres, while it is estimated that there are at least twenty million acres well adapted to the purpose—four times as much as the entire area in use for grape culture in France. A large portion of this land is almost worthless for any other purpose, and can be had for one dollar and twenty-five cents to two dollars and fifty cents per acre. In eighteen hundred and sixty-eight there was produced one million eight hundred and eighty-four thousand gallons of wine and two hundred and fifty-three thousand six hundred and forty-three gallons of brandy; in eighteen hundred and sixty-nine, two million six hundred and thirty-six thousand gallons of wine, one hundred and sixty-nine thousand eight hundred and eleven gallons of brandy; in eighteen hundred and seventy, three million eight hundred thousand gallons of wine, one hundred and fifty-seven thousand and fifty gallons of brandy; in eighteen hundred and seventy-one (estimated), six million gallons of wine, two hundred thousand gallons of brandy. The value of the crop of eighteen hundred and seventy-one to the producers may be stated as follows:

6,000,000 gallons wine at 30 cents	$1,800,000
200,000 gallons brandy at $1 50	300,000
Total	$2,100,000

To this may be added at least six hundred thousand dollars received for table grapes, consumed in California, and shipped to Nevada and the Eastern States and Territories. The average price obtained for these products (wine and brandy), when sent out of the State, is nearly thrice that sum. In some sections, where there are quite a large number of vineyards, transportation is so difficult and expensive that at least one half of the grapes are wasted, and the remainder are mostly used for home consumption, and are, therefore, almost unproductive of profit to the producer.

Then at least one half of the vines in the State are too young to be productive, or too far from a commercial market for the product to be

sold with profit. We then have the following showing of the product of twenty thousand acres of land, viz:

From wine	$1,800,000
From brandy	300,000
From sale of grapes	600,000
Total	$2,700,000

Or one hundred and thirty dollars per acre. From this may be deducted cost of cultivation, expense of making wine and brandy, and marketing crop, say thirty-five dollars per acre, and we have a net profit of one hundred dollars per acre.

From report of Chief of Bureau of Statistics we take the following statistics of imports for twelve months ending June thirtieth, eighteen hundred and seventy:

Spirits and cordials in casks, proof gals	1,652,196	$1,583,008
Spirits and cordials in bottles, doz	45,856	203,148
Wine in casks, gals	9,048,013	3,214,598
Wine in bottles, doz	520,623	2,586,316
Total		$7,587,070

From these few facts that we have been able to collect the thinking mind cannot fail of the conclusion that the great future of this State rests in her wine producing soils. From the increased amount and improved demand for our wine for the last five years, we hazard the assertion that in ten years the wine interest of California will overshadow either of the other principal staples of this State.

GEORGE JOHNSTON,
G. W. APPLEGATE,
I. N. HOAG,
L. R. CHAMBERLAIN,
S. L. WILSON,
J. CLAYTON.

REPORT ON WINE MAKING AND PRESERVING.

In my first report I mentioned that casks containing light dry wines should be full always, and I will only add some further explanation so that beginners may understand it more fully.

Casks, which under all circumstances must be clean and sweet, when first filled with wine juice or must cannot be kept full without loss, which should not be, especially if fermentation sets in at once as is the case in warm weather.

The running over, if it were only oxydated ferment without loss of

wine, would be well enough. But this running over of lees and wine is very apt to sour and fill the cellar or room with acetic or vinegar gas, transplanting itself, which answers very well for a vinegar factory. The casks want filling only so much as to prevent this. The carbonic gas generated by fermentation will keep the casks full for the time being, the superfluous will escape through the bung hole.

In strong fermentation a light covering answers very well; but when it goes down or evolves less gas, it would appear necessary to either make the vent hole so small as to correspond with the quantity of gas generated or to use fermenting pipes.

The first method is not practicable; for if not fully proportioned, vacancies will be created, and atmospheric air—the great generator and destroyer—will have a chance to penetrate and convert such light percentage of alcohol in solution to vinegar very readily. This is a well known fact, that the thinner alcohol is spread and exposed to warm air the sooner it will turn into vinegar; and upon this principle vinegar factories are carried on. If anyone will examine the vacancy near the bung hole he will find it coated over with a slimy, oxydated matter, and being thin and half dry is the very thing to start the spoliation of wine.

For these reasons I prefer the use of the fermenting pipes. These consist of tin pipes (lead should never be used) or small india rubber hose, one end to go into a well fitting bung having a corresponding hole bored through it and fastened perfectly air tight, the other end bent over to go into a dish or can of water, penetrating not more than one inch. In this way the water will offer very little obstruction, let the excess of gas escape, close up again, and leave the casks full all the time.

If fermenting pipes cannot be had, then a very good substitute is to fill the hole bored through the bung with cotton. This will give vent to the gas and in a measure prevent the ingress of air, only care must be taken that the wine does not reach it. Stirring up occasionally is very promotive of fermentation, because it brings the ferment in closer contact again with the sugar and forces out the gas to make room for more.

After fermentation is over entirely, or when it appears that the gas does not keep the casks full, then is the time to fill up with wine and close the well fitting bung hole moderately tight. Fill up again whenever neeessary and keep it full.

If the juice is of proper proportions, right temperature, and not charged with different kinds of salts, which are kept afloat by resinous matter that almost always accompanies them, or an excess of (ferment) vegetable matter not belonging or not necessary in the juice, it cannot fail to make sound dry wine.

It is impossible to prescribe a certain way of making wine. What holds good if the juice is constituted one way will not answer if it is otherwise. There are no secrets about the business, as so many are fond to believe, but all depends upon the quality of the juice itself. A fundamental knowledge and practice, to ascertain what treatment is wanting, is all that is necessary, and all little important doings and fineries do not amount to much.

Rags on bungs should never be used. They act like suetions; are most always wet, and sour in a short time. This will appear evident from the vinegar flies which colleet around them. Pine bungs, steeped in oil, I prefer any time to oak, because they are driven better and will not crack so easy in dry weather. I have been rather long in describing

these points, but may be excused for the reason that my lines are directed to beginners only, through whose ignorance and carelessness a great deal of wine is spoiled every year, and offered for sale only to be rejected, for acetic acid is no product of the grape, but of decayed or oxydated alcohol. Wines started once that way cannot be cured entirely, and had better be stilled as soon as possible.

The practice of many drawing wine from the same cask every day for a length of time, or boring holes in it lower and lower, should be discontinued, for it not only spoils the wine but the cask also. When a cask is partly empty for some time, in a dry atmosphere, the staves will shrink and admit air, may the bung be ever so tight. These sieve-like openings allow not only the escape of the alcohol, but that of the ether, which gives the aroma also, the latter being even more flighty than alcohol. Such wine, when not positively soured, will appear flat and may be considered nearly worthless.

I have been speaking all this time of fine, light, dry wines, as they should be, and as they are mostly wanted, not of those strong, heady, half fermented ones, which in fact are not wines at all fit for use, and have spoiled our market East to a great extent. These will stand bad practice longer in draught, at home, which circumstance can easily be explained, as follows: Alcohol escaping, by opening so often, gives a fresh impetus or chance for a light after-fermentation, which fills the cask again with gas, and hence the opinion of many, that this or that man's wine will keep to the last drop. But such wines cannot be sent with safety any distance, as they are liable to spoil, burst the cask, and even a man's stomach, if it is not well bound.

Ordinary foreign wines imported, very often suffer on that account. Frequently they are sent before they are ripe, and as good luck will have it, sometimes arrive safely enough, with the exception of being turbid and forcing out the corks, if sent in glass. But there is this difference: what they lack in quality they make up in price. And I may here add, in conclusion, because this holds good throughout, that wines are admired for their taste and the invigorating effect they produce; taste makes their price, and not the amount of alcohol they contain.

From this it may be seen that not only the producing and making of fine wines is all that is wanting. The well keeping and handling, also, when for use, is very important, and needs correcting as much as anything else.

In giving these statements, I have in view, as may well be supposed, my own experience and practice in the winery of the Orleans Hills Vinicultural Association, and it is my firm belief that I justly can do so. I have had not even one cask of wine spoiled yet, even in the warmest weather. Besides, large shipments have been made East, and never yet a complaint of anything being spoiled has been made.

JACOB KNAUTH.

CULTIVATION OF THE VINE.

My experience in grape growing has been confined to San Joaquin County, where we have every variety of soil, from sand to stiff black clay, but a remarkably even climate; the thermometer during the Summer and Fall months ranging from seventy to ninety degrees. The subjects of planting and pruning were so fully discussed at your last

meeting that I will be brief. In preparing the land for a vineyard I plow deep (Summer fallow land is preferable), thoroughly pulverize and roll smooth; then lay the land off with a line and pole, and set stakes for each vine, after which the vines or cuttings are planted with a spade. Prefer planting two cuttings at each stake. The cost of plowing, pulverizing and planting will not exceed twelve dollars per acre. The cost of cuttings will depend on the varieties and number planted to the acre, say from six to twelve dollars per acre. The distance for planting will be governed by the variety and for what purpose the grape is to be used. For market I plant the Mission and other string growing grapes eight by eight. For wine we are planting six by six, and small growing varieties less. The first and second year cut the vine back to two or three buds; the third, tie them up to the stake, and at the Fall pruning leave the body of the vine fourteen or sixteen inches high. The strong vines would need tying up the second Fall. I never Summer prune the vines. Get a small crop the third and fourth year; commence paying the fifth. The last season our Mission vines eight and ten years old produced from eight to ten tons per acre, which is not an unusual crop.

The selection of varieties most profitable for planting in different localities is one of the most difficult points to determine. I have selected the following, which are grown around here and sufficiently tested for wine or market to warrant planting. For early market the Madeline Chasselas de Fontainbleau and Lady Sweetwater ripen the first of August and ship well; Black Malvoisie, Black Olive, Black Hamburg, last of August, bear well and fine flavor; Black Prince ripens from September first to tenth, strong grower, large bearer, ships well, one of the most profitable at present; Rien de Nice, good grower, bears well, fine color, last September; White Muscat of Alexandria, fine flavor, sets poorly some seasons, September; Black Morocco, fine large grape, shy bearer, brings a high price, October; Black Ferrara, grows and bears well, ripens late and keeps longer than any grapes we have in cultivation. Mission, when grown for table use, is large sized, fine color and flavor, and pays well. For wine we are planting White Frontignan; will produce from three to four tons to the acre; considered one of the best of the musk grapes; ripe middle of September. Reisling, White Tokay, Berger, Chasselas de Fontainbleau, all bear well and ripen early. Zinfindal bears large crops, makes an excellent white or red wine. Black Malvoisie, fine red or white wine. Black Burgundy, good bearer; makes red wine of good body. Black Malaga, good bearer; fine musk flavor. Mission I find best for port, sherry, and madeira. The last two will not develop their flavor until after the fifth year.

For Raisins.—White Malaga, good bearer; oval berry of good size; hard, pulpy grape, which dries well; ripens middle of September. White Muscat of Alexandria makes a fine flavored raisin; ripens rather late some seasons for drying outside.

We have a great many other varieties growing around here, all of which mature before the frost of November, many of which will, no doubt, prove profitable.

GEORGE WEST,
Stockton.

CHOICE OF VINES FOR WINE MAKING.

These remarks will be confined to the consideration of the best varieties of wine grapes. The market demand for table grapes and raisin grapes will readily determine any questions that may arise respecting individual merits. It is already known with sufficient accuracy what grapes keep best, look best, and dry best. We know that the Muscat of Alexandria and Flame Tokay are conspicuous in the category of grapes notable for splendid appearance and safe carriage; that the Muscat is in prominent place for raisin making, and with the White Malaga, extensively used for the raisin of commerce. That the Fiher Zagos possesses qualities for raisin grapes in having a delicate skin, but few seed, and a natural tendency to dry early, that has commended it for raisin making, but that the superior size of its competitors has given them the preference. The Muscats, Tokays, Chasselas, Hamburgs, and other fine varieties of table grapes now in successful culture among us, leave nothing to be desired in this department of vine culture.

But the question as to the best varieties of grapes for wine making presents more difficulties. In choosing vines to grow wine grapes, regard should be had to their adaptability to soil and climate, as well as to the description of wine which it is intended to produce. In Europe this choice is less difficult than in California, where we cannot profit by lessons of long experience. In Europe, however, circumstances require them to calculate whether the quality of the product is more profitable than quantity. Here we cannot afford to sacrifice quantity to quality. If there are favored sites in California like certain spots on the Rhine, in Burgundy and elsewhere, where two hundred gallons of a choice wine brings more money than one thousand gallons of a wine in less repute, they remain to be discovered. Our object should be to ascertain what varieties of grapes will yield the largest amount of wine, having berries which contain in suitable proportions the elements best adapted to the manufacture of fine wines. This is the more important, because of the rule that quantity and quality rarely go together. Du Bruel lays it down as an axiom, that quality exclusively should not be thought of except in those favored localities where the high price of the product will compensate for the smallness of the yield; everywhere else, quantity must have the preference.

In this early stage of California vine culture we do not require an extensive list of varieties. Our long, dry Summers give a uniformity to our climate unknown in Europe. And there is probably less difference in the quality of such soil as should properly be selected for vineyards or its adaptation for grape growing, as in consequence of their volcanic origin the elements of true nutrition are more constantly present. In France, twelve hundred or more varieties of vines are cultivated. It certainly would simplify our operations if we could designate those to be planted by units instead of thousands. Yet it is not probable we shall ever find a grape to unite with productiveness all the requisites of a desirable wine grape, if we aim to manufacture a wine above the ordinary kind. We require varieties to mix with each other. The wine of our Mission is improved by mixing with almost any variety having less sugar and more tartaric acid; nor are our best varieties so perfect that they may not be made better with its must commingled with the must of other varieties having constituent qualities adapted to such a union. The quality of the wine is not only improved, but the success of manu-

facture is rendered more secure. Thus certain musts are liable to remain sweet for want of ferment. These are corrected by adding must of different characteristics. This principle may be applied in various ways, as when sugar, tannin, acid, or water may be in too large or too small proportions, and it is particularly demanded to impart flavor when required.

It is convenient to have varieties with diverse epochs of maturity, in order to prolong the vintage, and have the harvesting done gradually, so as to avoid being pressed with an unwieldy force of laborers at one time. This can be effected by planting such varieties as will ripen at different periods. In Languedoc, whose climate more nearly resembles that of California than the more notable wine districts of France, this plan is systematically pursued, by planting one third which ripen in September, one third ripening a fortnight later, and another third which ripens still later. And here it may be remarked, en passant, that California might have derived lessons of more practical value in viniculture from Languedoc than she has from Germany and Northern France, from whence we have chiefly derived our example and reproof, and it is not improbable that her favorite grapes may be those best adapted to our circumstances. Their vines like ours are planted comparatively far apart, and are trained as we train, with low stocks and short spurs. Their yield is reported as enormous, in fact well nigh incredible—fifteen hundred, two thousand, and even twenty-five hundred gallons to the acre. Flagg, in his work on European vineyards, mentions one proprietor (M. Mares) as making, from two hundred and fifty acres, three hundred and seventy-five thousand gallons of wine. This would be at the rate of fifteen hundred gallons to the acre.

The names of the varieties best known among us we propose to give, with a reference necessarily brief to their characteristics, and then select from them those regarded as entitled to our confidence and adapted to circumstances now existing in California. The Mission, or California, claims the first notice as the earliest known and most widely cultivated. Many still think it the most profitable grape. This opinion is less common every year, and will probably soon cease to be entertained at all. It is claimed for the Mission that it is of hardy growth, exempt from disease and accidents; that it makes good, sound, well-keeping wine; and in consequence of its large supply of sugar yields abundantly of spirit. This may all be true, and yet there are other varieties possessing all these qualities, and, with the exception of its spirit capacity, possess them in a more eminent degree. It will scarcely be denied that it has some positive objections. The proportion of sugar is too large to that of tartaric acid to make an entirely acceptable wine. This saccharine excess is liable to suspend fermentation at a slightly reduced temperature. The absence of an agreeable flavor is conspicuous. Its red wine is not in popular favor, nor does its dry white wine ever allow an excellence to exalt our State in wine product to a level of France and Germany. Yet those having vineyards largely planted in Mission grapes need have no regret on that account. It is an admirable adjunct to other grapes, to commingle their merits. Possessing in a large measure sugar, the most essential ingredient in wine, we may get aroma from one and tartness from another to supply its deficiencies in these qualities.

Black Malvoisie, the grape known as Pino, and by other synonyms (for our vinicultural nomenclature is eminently confusing), is entitled to rank among the highest of our wine grapes. It possesses all the good

qualities claimed for the Mission; some of them in a higher degree. Thus in some localities it is more certain and more prolific. It ripens earlier. Made into white wine it has thus far promised well, while its red wine is better colored and of more agreeable flavor. Mixed with Mission for red wine, the last named is decidedly improved.

Zinfindal—a black grape of heavy product, standing among the very first in this respect. The two prominent excellences of its wine are tartness and a peculiar and delightful flavor resembling the raspberry—a flavor which the palate persistently relishes. Mixed with the Mission, it favors fermentation and improves its color and aroma. Even when mixed in moderate proportions in ferruginous soils it is par excellence our red wine grape, the one which we confidently hope to contend successfully for the place in public esteem now worthily occupied by the skilled vintages of France. Those planting vines on suitable sites, in soils rich in iron, cannot go far astray in planting ever so largely of this variety, for its white wine is also of superior quality. What other grape have we uniting abundant product and abundant flavor? The color of its red wine, too, is striking, not unlike the famous Montepulchaine. One objection to it should not be omitted mention of; its liability to sunblast in certain localities. It would not be safe to plant it too freely where the Hamburg cannot succeed; but even then there is a partial compensation in a generous second crop. The second crop of Zinfindals is, as a rule, large, and unlike the second crop of most other grapes, and well worth gathering. It makes a wine of lighter color and body; but the flavor is scarcely inferior to that of the first crop.

The Rose of Peru is of hardy growth and prolific, not so succulent as the preceding, the wine product is in less proportion. Its wine is not well known. Some assert that it has made port wine of best promise. The Black Hamburg was extensively planted a few years ago, but now neglected chiefly from its liability to sunblast. It is probably an inferior wine grape to the Black Malvoisie, besides being more uncertain.

Of white grapes, the Golden Chasselas, with its multitudinous synonyms, is entitled to a conspicuous place. It has a hardy stock, bears abundantly and ripens early. The wine is smooth and rather light, without a characteristic flavor.

The Berger, called Caveilac by the French, is a white grape, ripening late and a very heavy bearer. Wine light and tart—an admirable adjunct to the Mission to promote its fermentation, reduce its body, and communicate tartness. It is perhaps the latest bearer among our wine grapes, unless we include the Queen of Nice, or White Nice, which likewise makes a light, tart wine resembling the white *vin ordinaire* which the lowest on the Rhine has served to him in the wine shops.

The Fiher Zagos, a certain and good bearer, with more sugar and less tartaric acid than the above. The wine is smooth and delicate.

The Chasselas family (not including the so-called Golden or German Chasselas), of which the Chasselas Fontainbleau, Rose Chasselas and Barbaroux are prominent members, ripen among the earliest and bear well. Wine smooth, light, and keeps well, without characteristic flavor. The vines sucker badly and require pruning with long spurs.

We now approach varieties entitled to a first consideration, if we were in search of the quality of the product without regard to the cost of the production. Prominent among these are the Reislings. The wines made from them in California, though of less excellence than the

famous Rhenish vintages, are, in some cases, of superior quality and of high promise; but the Reisling wine has not so far been sufficiently profitable and certain to have encouraged its rapid extension. It is alleged that high training will insure a good crop; but it has not been proven other than on a large scale that vines can thus be trained with profit. It certainly will not do so if by a few heavy crops we impair the vigor or perhaps sacrifice the vitality of the plant. Wherever high training is practiced in the Mississippi Valley, it requires an amount of labor that differs so widely from our economical processes as would make it to us an unsafe enterprise. On the whole, the profitableness of cultivating the Reisling grape may, up to this time, be regarded as an open question. The De Shay, sometimes called the Gray Reisling, makes a wine with considerable bouquet, but the same objection applies to it. Moreover, it requires more time to mature than our rates of interest justify. These remarks, perhaps, in a great measure, apply to those varieties that are properly classed as Burgundy grapes, as well as some grown in Champagne and the Gironde, and to be found in some California vineyards.

Of the musk grapes, the most valuable variety for wine is the Muscatel, otherwise called the Muscat of Frantignan, the German Muscat, and by other synonyms. It ripens early, is a shy or barely moderate bearer, and requires a warm and rather fertile soil. Its musk flavor is strong, yet delicate. Its cultivation on a more extensive scale in California is desirable, where we have so few grapes of decided flavor. In the single province of L'Hirault, France, there are five thousand acres devoted to its culture, and yet the product of wine from it, in many instances, does not exceed sixty gallons to the acre; but it is, in such cases, sweet wine made from partially dried grapes. The Muscat of Alexandria bears better, but the flavor is inferior to the Frontiniac. Ripening about the time of the Mission's maturity, their musts may be advantageously mixed.

In our present scarcity of flavoring grapes it may be desirable to those with extensive vineyards to have in them a few of our American grape vines, V. Lupina. The Catawba is perhaps the preferable on account of its color. A small quantity of the must of the Catawba and Muscatel mixed with a much larger quantity of Mission must has been known to make a sensible improvement. The subject is worthy of consideration.

To sum up in a few words the conclusions derived from the above imperfect descriptions from the best grapes to plant for wine making, where a very small number are to be selected, we enumerate the Black Malvoisie and Zinfindal among the colored grapes, and the Golden Chaselas, with the Berger, Fiher Zagos, and Chaselas Fontainbleau among the white grapes. Of musk grapes, the Muscatel is preferred. To owners of Mission vineyards in search of suitable varieties of grapes to mix with them at the press, or their must in the cask, the Malvoisie, Zinfinal, for red wine, and Berger and Muscat for white, are deemed preferable. When red wine only is intended to be made, and only one variety to be planted, the Zinfindal is esteemed the best, if the site is a proper one and the soil abounds in iron.

To conclude, it must be borne in mind that in the infancy of California viniculture accuracy is unattainable on this subject. In the oldest and most enlightened wine countries of Europe they still want positive knowledge on points of interest that have elicited their attentions for centuries; and yet it will not be without profit if we succeed at this

early day in finding ever so few kinds in our search for the best that will give assurance to those planting new vineyards or extending old ones that what they plant will not be of a variety altogether unsuited by surrounding circumstances. The losses sustained by propagating useless vines whose qualities remained to be tested has been very great, and continues to be. If hereafter those in doubt would limit their selections to the few we have named, these errors would greatly be avoided. In the meanwhile it does not follow that we possess the very best kinds for our purpose. With the soil and climate of California, our vineyards should not be surpassed in productiveness by the vineyards of Languedoc, but we have reliable testimony that they are. If the variety cultivated contributes to this superiority, we should not delay in procuring those whose reputation for productiveness is best established.

The views here presented are not set forth authoritatively as the expression of the widest experience and best judgment. It is not probable that they will meet with an approach to general concurrence; but if they accomplish nothing more than to invite inquiry and promote investigation they will serve a good purpose. It does not challenge criticism, but invokes investigation.

JOHN A. LOCKWOOD.

THE BEST GRAPES FOR GENERAL CULTURE.

For shipping and the table I prefer the Rose of Peru, White Muscat of Alexandria, Flame-colored Tokay, White Palestine, White Hamburg, Purple Damascus, Black Malaga, Black Prince and Black Hamburg. These varieties all bear abundantly, are fine pulpy grapes and command good prices. For making white wine to ferment the skins I prefer the White St. Peters; this variety makes remarkably fine wine; White Malaga—this makes good wine and a greater quantity of a very good quality, also fine brandy; White Muscat, White Truvriner, Orleans, White Reisling, White Muscatel, and White Nice. The above are all good for making wine by fermenting of skins or without. For making port, claret, or red wine, the Rose of Peru, Black Hamburg, Black Burgundy, Black Prince, Los Angeles, Black St. Peters, and Black Malaga. For making white wines without fermenting on skins, all of the above are excellent; also, Black Zinfindal, Black Portugal, Black Martell, Black Malvatia, Catawba, Isabel, and Concord. The three latter, if grown on rich alluvial soil, and pruned with very long spurs, produce abundantly and make a high toned excellent wine that commands a good price. If improperly trained the yield is too small. There should be left from six to eight eyes on spurs. In this way the young shoots while tender do not break off so badly; in fact, I have not tried any kind of good, ripe grapes, grown in a proper location, but what make good wine of some kind. All of the above varieties I have named are profitable to raise, and I should not fear to extend their cultivation to any extent with a positive certainty of success, if a good, dry location is selected, clear of alkaline matter, and properly trained, pruned, and taken care of. For raisins I would choose, in the order named, the White Malaga, White Muscat, White Napoleon, White Candalia. The latter, I think, promises to be very good, although I have not tried it to my satisfaction entirely. The White Malaga I think is preferable, and bears so abundantly, and makes a very tender, fine raisin, and cures so readily. It should be cul-

tivated on dry soil, reducing the spurs and increasing the eyes, so that the fruit may have plenty of space. It sometimes grows in such clusters that it rots, as the heat and light cannot circulate through them.

J. R. NICKESON, Placer.

NATIVE AND FOREIGN WINES.

The wine product of the State of California, although yet in its infancy, now numbers several millions of gallons annually; starting from the labors of the Catholic missionaries, who it is said, and from good authority, raised the California grape from the seeds of raisins sent to them from Spain. There may have been roots or cuttings introduced into Mexico from Spain at an early day, and they may have obtained some of these from Mexico. The priests of the missions are entitled to the honor of first introducing the fruit into California. In connection with this matter we should not forget the labors of Colonel Haraszthy, for to his zeal and enthusiasm California is indebted for many of the choice varieties of foreign grapes, and also the successful demonstration that the grape could be grown from the cutting without irrigation.

Justice compels us to give him a share of the credit we so cheerfully award to the Fathers. The Grapegrowers' Association of the counties of Napa, Solano, and Sonoma has been in existence for two years, and those who are interested in the business of cultivating the grape and manufacturing wine have felt its beneficial influence. They number in their ranks some of the most intelligent and worthy citizens of the three counties. In the association are introduced subjects relating to the particular business interests of the vintner and wine maker; discussions are had on all matters appertaining to their interests, and much valuable practical information is obtained that cannot be found in books; for nearly all books that treat of grape-growing have been written for a climate differing very much from ours, and will not apply to California. The movement now on foot to establish a State Association of Grapegrowers and Wine Makers is one fraught with great results to the State in an industrial point of view. As to its monetary aspect, the time is not far off when the grape growing and wine making interests will rank as one of the foremost of our agricultural resources.

Much has been said about the use of wine as a beverage, and many deprecate the use of it. Everything that God has given us is good; it is the abuse of what he has given us that is bad—gluttony, the excessive use of opium, tobacco, chloroform, and even chloral hydrate; and I might go on and enumerate many other things and many habits that are as fully life-destroying and degrading as drunkenness. If reformers would turn their attention to reformation they must make a catalogue of all the vices and attack them en masse. Of many vices of a much more deplorable and ruinous character to the health of both sexes but very little has been said by public reformers. If reform must be the order of the day, let us sweep the whole mass of objectionable things from the face of the earth. As regards stimulating drinks, there is not a nation on the face of the earth, either civilized or savage, that does not make use of stimulating and intoxicating drinks in some form or other. If men will drink, and it cannot be prevented either by law or public opinion, what next is best to do? Give them a fine and healthful

article of wine; as the hard drinker would say, "let them taper off on that." Let them acquire a taste for such a beverage—for drink men will have. Wine will not hurt them as will the strong decoctions of spirits that are made by almost every respectable liquor dealer in the dark corners of his cellar, where cocculus indicus, and many other "cusses," are mixed with alcohol, flavored and brewed to represent every kind of drink that ever had existence, the basis of all of which is alcohol. I do not know of an instance, neither have I ever heard of one, when a man had delirium tremens from the use of fine wine. I wish it understood that I do not now allude to medicated wines, such as Redding speaks of as genuine port, made from London Dock, brandy come, red cape, cider, and a mixture of gum dragon, red sanders, alum, and tartar. This is the old crusty port that is sought for sometimes by physicians to administer to their patients to give them strength and nourishment. It is but a few days since that I was talking with a gentleman about the manufacture of brandy from the grape. He informed me that a New York druggist remarked that California brandy was too expensive; he made an article that suited his customers just as well as any high-priced brandy, and the cost was not one-quarter that of the pure article.

The adulteration of wine is not a practice very recently introduced. During the days of George IV he possessed a very small quantity of remarkably choice and scarce wine. The gentlemen of his suite, whose taste in wine was hardly second to their master's, finding it had not been demanded thought it had been forgotten, and, relishing its virtues, exhausted it almost to the last bottle, when they were surprised by the unexpected command that the wine should be forthcoming at an entertainment the next day. Consternation was visible on their faces; a hope of escaping discovery hardly existed, when one of them, as a last resort, went off in haste to a noted wine brewer in the city of London, numbered among his acquaintances, and related his dilemma. "Have you any of the wine left for a specimen?" said the adept. "O yes; there are a couple of bottles." "Well, then, send me one, and I will forward the necessary quantity in time; only tell me the latest moment it can be received, for it must be drank immediately." The wine was sent—the deception answered; the princely hilarity was disturbed by no discovery of the fictitious potation, and the manufacturer was thought a very clever fellow by his friends. Such clean pieces of deception are practiced upon the public every day, and I should judge that they rather like it than otherwise, for they continue to ignore the pure juice of the home grape, and accept a foreign article of doubtful reputation at least, simply because it bears a foreign brand. Spurious decoctions are not only made in all grape-growing districts in Europe, but in the United States also. A case was related some time since in one of the French courts, where a wine brewer was arraigned for making spurious wines. The best chemists of Paris were summoned to analyze the wine, and they pronounced it the most perfect counterfeit that they had ever examined, there being only one article lacking to make it perfect. The Judge asked what that was; the chemist informed him. The culprit acknowledged that the wine was spurious, and that he was ready to pay his fine, for the knowledge of the deficient ingredient was worth more to him than all the fines they could impose on him.

To such a degree of perfection are the imitations of wines and brandies carried, that it is almost impossible for the best expert to detect the counterfeit. Now as to spirits; it is truly astonishing when we

come to search the records in reference to the amount of alcoholic beverages that are consumed in the world to see the summing up. Statistics taken from a work published by Samuel Morewood, of London, Surveyor of Excise in eighteen hundred and twenty-four, gives the following information (the book is dedicated to Frederick John Robinson, Chancellor of the Exchequer): In seventeen hundred and eighty-seven, France freighted thirty-two vessels, and imported into England two million four hundred thousand gallons of brandy, and most of this was smuggled. The Dutch distilleries produced annually, in seventeen hundred and seventy-four, fourteen million gallons of gin; four million five hundred and sixty thousand of which were consumed in their own country. In Denmark, in eighteen hundred, Copenhagen annually produced spirits amounting to two million three hundred and forty-seven thousand eight hundred and fifty gallons. At Hensburg, two hundred stills were employed, and the produce was sent to Iceland and Norway. Russia distilled annually twenty-seven million gallons of brandy. This is a Government monopoly. These are but a few statistics. Startling and enormous as that of Russia may appear, it may be but small compared to that distilled at present, for these statistics were published forty-eight years ago. I have quoted sufficient to show the quantity of spirits that is distilled in but a few places, and the necessity for active measures to be taken to stop its use. Here we wine growers and wine makers come in as temperance men (the real Simon Pure) to the rescue. This can only be done by giving to the world a substitute for the villainous compounds that are sold as fine liquors. And California is willing and ready to do so. I have not the slightest doubt that this State is destined to accomplish this ameliorating influence, just as she has accomplished others by the discovery of the precious metals in her soil, both of which will have a deep and widely extended influence among the nations of many climes.

Come, then, with us, ye Solons of the land, and help us to spread the genial influence of our wholesome wines:

"The ruby dew that 'stills
Upon Val d'Arnois hills,
Touching the sense with odor so divine
That not the violet,
Its lips with morning wet,
Utters such sweetness from her little shrine.
When I drink of it I rise
O'er the hill that makes all poets wise;
And in my voice and in my song
Grow so sweet and grow so strong,
I challenge Phœbus with his Delphic eyes!
Give me then from a golden measure
The ruby that is my treasure, my treasure!"

When we speak of wine, we mean wine old and insinuating, that gradually finds its way into the stomach, leaving behind as it goes its delicious flavor and rich bouquet. "Good wine needs no bush." This is an old proverb, and originated in a custom in wine growing countries in Europe of placing a bunch of evergreens over the entrance of the house where wine was sold. A certain bishop, who was fond of good wine, instructed his valet, who traveled through Italy in advance of him, to mark under the bush "Est" ("It is") if the wine was good, and "Est, est" when it was very good, and when he found it indifferent he should not write anything. Now I wish every Californian to bear in mind that his wine should come up to the standard of "Est, est, ("It is, it is") good

at least, and as much in advance of that as possible. So you will perceive that the wines in famous Italy were not always good. An old author, however, says that in the better days of our Lady of Loretto they had a cellar of remarkably good wine there for the use of the faithful. The Church, as was her custom, exhibited her good taste, constantly keeping up a stock of not less than one hundred and fifty tons for this purpose, say three hundred pipes. The wines of Vicenza had once a good name; they were styled, in the way of the Italians, who love epithets, "*dolce et piccante.*" "The wine of Vicenza," the "Bread of Padua," the "Pipe of Traviso," and the "Courtezans of Venice" were formerly said to be the best of their kind in the world, and I presume that the man who wrote that had a right to know. Be this as it may, my friends, in our business of grape growing and wine making, let us endeavor to emulate all that is good in our predecessors, and ignore the bad. I hope that in your efforts to establish a State Association you may be crowned with success; and you must recollect that there is no success in any cause among idlers or drones; everything requires work, and if you still find there is something needed, you may be sure that it is a little more work.

J. R. SNYDER,
Sonoma.

BRANDY FROM GRAPE POMACE.

Mr. President and Members of the Vinegrowers and Wine and Brandy Manufacturers' Association:

At the last meeting of the association there was some discussion on the manufacture of brandy; on which occasion I took the ground that a good brandy can be made from marc. That no more fusel oil should be left in the brandy than was absolutely necessary to give it the characteristic flavor of the grape after attaining the age of a year or more. That steam was better than the direct action of fire for the purpose of distillation, and on those points I wish to quote a few authorities. The United States Dispensatory, Wood and Bache, page 801, says: "There are volatile principles naturally existing in the grains, which accompany the liquor in all its changes, and give their characteristic flavor to the resulting spirit. These can scarcely be considered as impurities; but there are others produced during the process of fermentation, which serve seriously to contaminate the product. Among these is fusel oil or grain oil (amylic alcohol), which is offensive both to the smell and taste, and of which it is very desirable that the spirit should be freed as far as possible. As this oil has a considerably higher boiling point than alcohol, or even water, it is mainly left behind, if the distillation be not carried too far; yet portions still rise, and, to a certain extent, impregnate the spirit." From the New York *Journal of Pharmacy*, page 257: "Crude fusel oil (or oil of grain spirit) when distilled in a glass retort commences to pass over at about 190 deg. Fahr., and a considerable portion is obtained below 212 deg." Again, *American Journal of Pharmacy*, page 417: "With respect to the history of fusel oil: As is well known, Dumas obtained it first from the fermentation of potatoes. Ballard showed that with this, the oil obtained from the fermentation of grapes was in its principal constituent (amylic alcohol) identical; and Medlock and Rowney showed the same to be the case with the fusel oil of the English and Scotch distillers." Duplais, who is

considered a good French authority on distillation, says of the advantages of heating by steam instead of fire: First—economy of fuel, since it permits all the operations of the distiller to be conducted by the use of a single furnace, when otherwise each one would require a separate fire. Second—economy of labor and consequently greater facility of personal supervision. Third—perfect regularity of temperature necessary for the work. Fourth, and as a consequence of this regularity of temperature—a superiority in the quality of the product. On the style of still used in France, the same author says of the Derosne still: "It is in use in the larger portion of the distilleries of France," and with regard to the size of the apparatus: "The greater the capacity of the apparatus the better the quality of the product."

The same author, in speaking of marc brandy, says: "Usually the process of obtaining marc brandy is very objectionable. The following is the method pursued in wine growing countries: The marc, on leaving the press, is borne to a deep pit dug in the earth, sometimes plastered with clay, in which it is packed and pressed as it is brought. When the pit is full it is covered with straw, vine leaves and twigs, over which is thrown a thick bed of earth to prevent contact with the air. The whole is left to ferment for about six weeks. When it is thought the fermentation is completed they commence to distill the marc. For this purpose the boiler of a simple still, having a grating on the bottom, is filled to about three fourths with the marc, then a sufficient quantity of water is poured in to prevent the marc from burning in the still. It is then closed by luting and heat applied. The first product of the operation is very weak, and must be rectified or distilled to produce potable brandy at fifty degrees. The marc, thus submitted to a sort of dry fermentation, evolves an amount of heat sufficient to decompose it promptly and cause it partly to putrify, if care is not taken to be assured from time to time whether the fermentation is completed. A preferable method, which is adopted by some proprietors, consists in mixing the marc in a vat with tepid water at twenty-five to thirty degrees (seventy-seven to eighty-six degrees Fahrenheit), to cause a new fermentation, from which is drawn a light wine called piquette and which is distilled separately. The marc is then distilled with a small quantity of water.

Brandy from the marc has a very disagreeable odor, and always retains an acid and penetrating taste which is very difficult to remove. This insupportable taste is due to the presence of an essential oil which, according to M. Aubergier, exists already formed in the skin of the grape, and which is not developed in the course of and by the distillation as has hitherto been thought. This chemist, on rectifying some marc brandy in a water bath with a very gentle heat at the beginning of the operation, and regulated so as to obtain a spirit of thirty-six degrees Cartier, perceived that the first portion of alcohol was partly free from the acid principle which strongly impregnated the brandy he rectified. "I undertook," said he, "to repeat the operation, and divided the product into three parts; the first constituting all the spirits drawn off up to the period when I ascertained that the admixture of a small quantity of water caused it to become a little milky; I changed the receiver, and that which came over, until it became necessary to increase the heat sufficiently to cause the liquor to flow in a continuous thread, constituting my second product. After having continued the heat in order to draw off all the alcohol contained in the liquor, I obtained for my third product only a thick milky liquor. I took the first product and after repeated distillations with gentle heat, I obtained an alcohol

almost free from the odor of marc brandy. I conceived the hope that on repeating the rectification I might obtain a spirit absolutely free from this bad taste; but I tried in vain through three other operations. My alcohol had not the most agreeable flavor, and I think it altogether impossible to free it from a principle so tenacious."

From the foregoing quotation it is probable that the marc was fermented in a pit, and to some extent had putrified before being distilled. It is not surprising, therefore, that M. Aubergier failed to remove this insupportable taste. Had the marc been fermented in six days instead of six weeks, and distilled in a proper still by steam, instead of the direct action of fire, a fine flavored brandy would have been produced. I distilled some grape skins this season, part of which had heated, having had the wine pressed from them several days before I received them. They yielded a spirit which on the first distillation showed no milkiness on the addition of water; but owing to the large amount of acetic acid, a proportionate quantity of acetic ether was produced. To manufacture good brandy from marc it is necessary, first, to remove the skins (marc) as soon as pressed to a suitable fermenting tub, then cover with warm water, and a false head or cover to keep the skins under the piquette. After a few days, if the piquette is not attenuating as rapidly on the bottom of the tub as on the top, it should be drawn off the bottom and put on top. This will stimulate the fermentation. The skins should never be allowed to float on top of the piquette, or the acetic or putrescent fermentation will commence immediately. Acetic acid is formed at the cost of alcohol—therefore the necessity of preventing its fermentation; and the putrid flavor once acquired can perhaps only be removed by filtering repeatedly through charcoal, which, of course, would destroy the flavor of the grape. Second—It should be then distilled by steam (not by the direct action of fire), and with a rectifying column, by which, at one operation, the operator can deprive it of as much of its fusel oil as is desirable.

GEORGE JOHNSTON,
Sacramento.